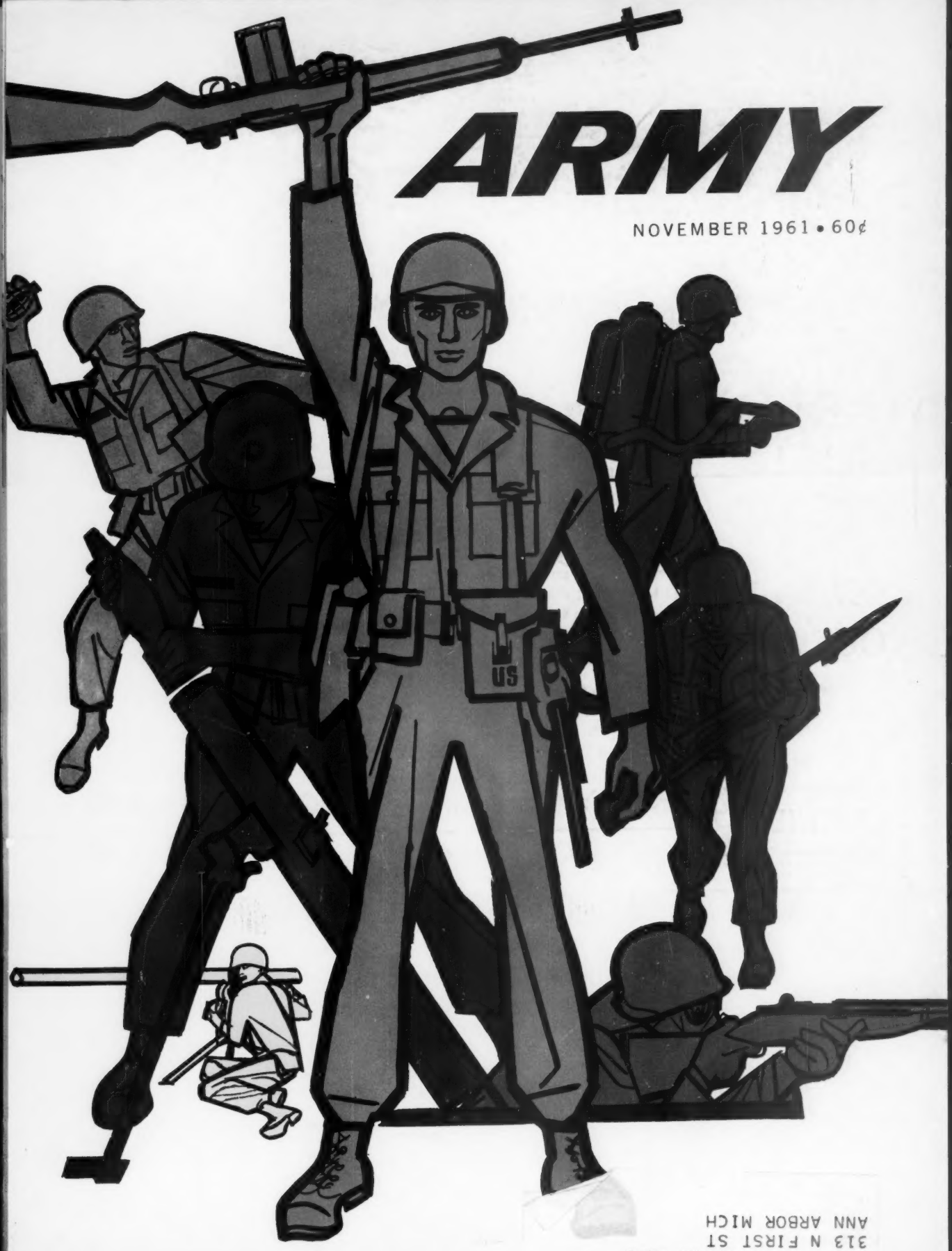
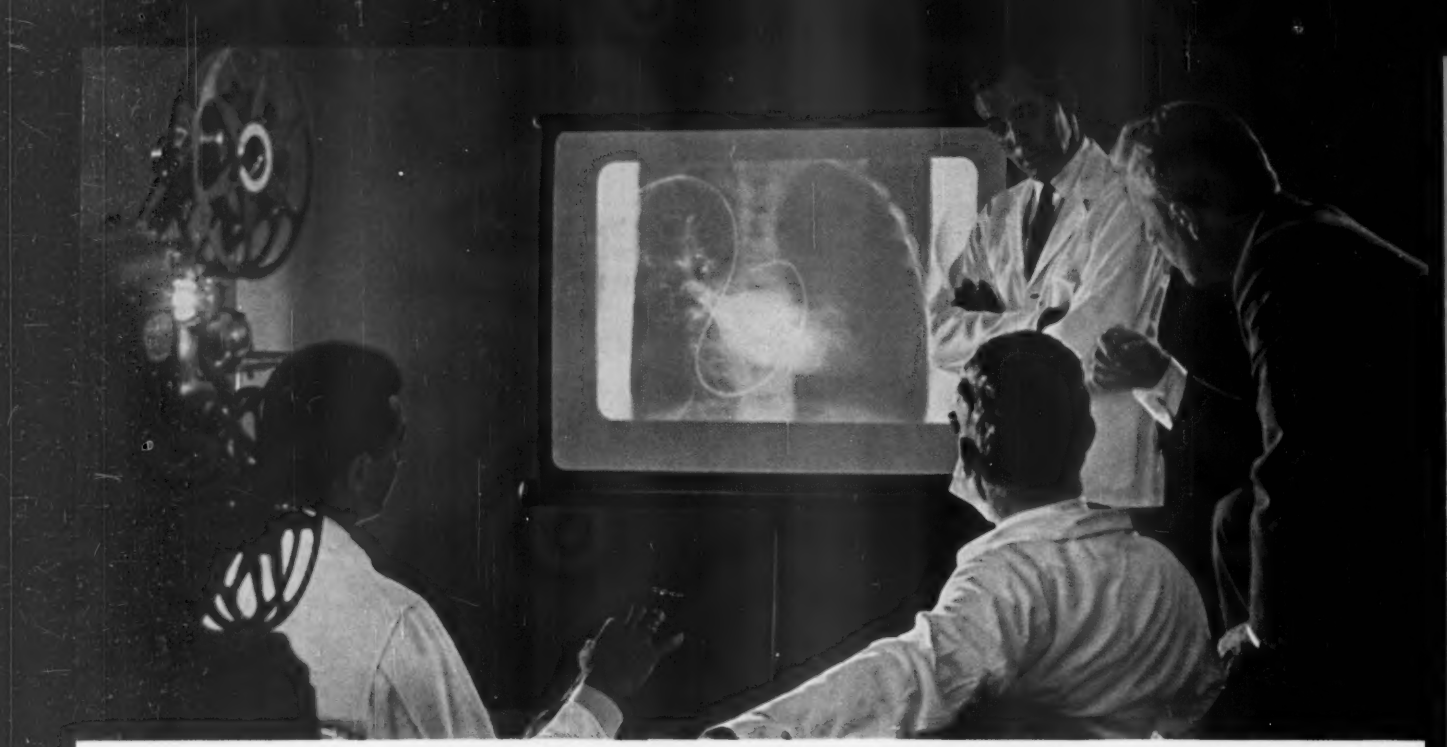
ARMY

NOVEMBER 1961 • 60¢





Today many heart specialists use X-ray movies made practical by Raytheon's Machlett Laboratories Division

INWARD... OUTWARD

Probing into the human body or outward along our airways, Raytheon electronics guard your well-being and safety.

In the fight against heart disease, doctors have a unique weapon in X-ray motion pictures. Practical X-ray movies and televised X-rays have been made possible by Raytheon developments that reduce exposure to harmful radiation by 90 per cent. The result is earlier and more accurate diagnosis of heart disease.

Across the country, Raytheon radars precisely track flying aircraft to help air traffic controllers keep order along the skyways. With flight speeds increasing and traffic becoming more dense, development of still more powerful radar systems by Raytheon, in cooperation with the Federal Aviation Agency, helps assure continued air safety.

In these and other ways, Raytheon pioneers new electronics frontiers—strengthening our defenses on land, sea and in the air, improving industrial production processes, increasing everyday comforts and extending the scope of man's knowledge.

RAYTHEON

EXCELLENCE IN ELECTRONICS

RAYTHEON COMPANY

LEXINGTON, MASSACHUSETTS

In Mercury Control Center room at Cape Canaveral, designed under supervision of Bell Telephone Laboratories, NASA flight controllers make all vital decisions concerning a Mercury mission. Large map displays equipment status at tracking and communications sites, preferred recovery areas, the position of the capsule and its "immediate impact point."

Bell System manages building of global communications network for Mercury spacecraft

On September 13, National Aeronautics and Space Administration first achieved the orbital flight of an unmanned Mercury spacecraft, using a new world-wide communications and tracking network.

Soon, will come manned orbital flight.

The Bell System has played a large role in the development of this scientific project.

Western Electric headed an industrial team on which Bell Telephone Laboratories also played an important part in building the world-wide network of tracking and monitoring stations.

This 60,000-mile communications route, the bulk of which is teletypewriter and telephone circuits, ties together 17 tracking and instrumentation sites with the Goddard Space Flight Center in Greenbelt, Md., and the Cape Canaveral Mercury Control Center.

As a Mercury capsule orbits over the area covered by each site, the far-reaching communications network immediately begins feeding information received from the capsule with clockwork precision. So fast and efficient is this communications system, it takes only seconds for data to start flowing from any site through Goddard to Canaveral!

The Bell System is proud to have contributed its creativity and resources to this votal project and to the further advancement of global communications.

BELL TELEPHONE SYSTEM

AMERICAN TEL. & TEL. CO. / WESTERN ELECTRIC CO. / BELL TELEPHONE LABORATORIES / 21 OPERATING COMPANIES

VOL. 12, NO. 4 NOVEMBER 1961

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ARMY

A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

COVER: Both signal and symbol are used in this month's cover. Some readers may not know that an upraised rifle with muzzle pointed toward the enemy is the modern version of the age-old signal for "enemy in sight." But once the signal is understood, surely no American can mistake the meaning of the symbol. **By Tom Hickson**

published by the
ASSOCIATION OF THE UNITED STATES ARMY

DEL MAR OBSOLETES AGE-OLD 1-TO-1 PILOT TRAINING RATIO

...Puts One Instructor in Many Craft Simultaneously

Since the inception of flight, the only safe way to instruct a new pilot has been on a one-student-at-a-time basis. This has been especially true in primary flight training. And because of this, the number of students which could be safely processed has been critically limited by the number of qualified instructors available.

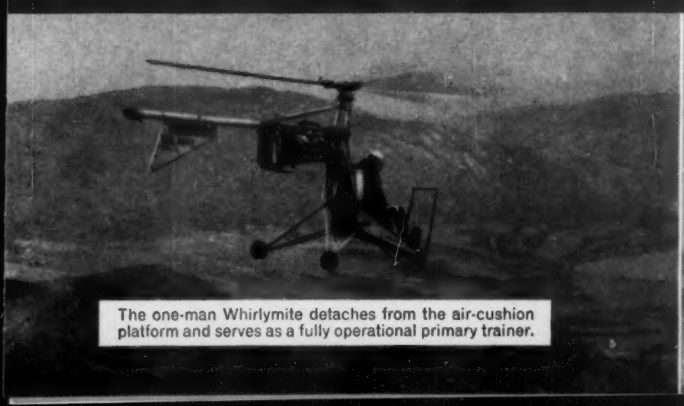
Now Del Mar introduces a new concept in helicopter flight training—the Whirlymite Self-Trainer. It is not a simulator, but an operational helicopter mounted on a highly mobile (GEM) air-cushion platform. The unique mounting of the platform permits full freedom to rotate in azimuth, rise vertically and tilt in all directions. Thus, the trainee practices all "in-flight" maneuvers without ever going more than inches off the ground ...with the complete security of the no-tilt, air-cushion platform beneath him.

The Whirlymite Self-Trainer is designed to move the student through initial training right up to solo flight, without requiring dual flight instruction. *This means that a single instructor can handle a number of students simultaneously through the training program.* And, when the initial training is completed, the Whirlymite may be easily detached from the platform to become a primary helicopter trainer.

For complete information on this versatile, low-cost training system write for Data File A-1655-1.

Del Mar
ENGINEERING LABORATORIES

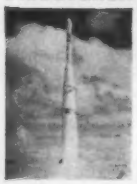
INTERNATIONAL AIRPORT
LOS ANGELES 45, CALIF.



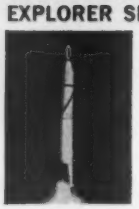
The one-man Whirlymite detaches from the air-cushion platform and serves as a fully operational primary trainer.

Del Mar's Whirlymite Self-Trainer system is presently programmed for evaluation by the U.S. Army.

DISCOVERER SERIES Position gyros to aid vital satellite recovery programs have been developed and produced for this series by General Precision.



EXPLORER SERIES Over 20 General Precision components have assisted in the launching of these satellites.



MIDAS General Precision has developed and is now producing control moment gyros to stabilize MIDAS satellite with reference to earth when satellite is in orbit.

The major systems interpreted here are testimonials to General Precision's experience in space. The four divisions of General Precision, Inc., are represented by some system, subsystem or component on nearly every satellite, space vehicle, missile and rocket now in operation or development.

All of the corporation's facilities are consolidated for the systems management of major new space and weapons projects. Thus, the comprehensive General Precision capability is now at a new peak potential. As a result, a satellite or space vehicle program can draw upon the services of more than 16,000 General Precision employees (including 4,500 scientists, engineers and technicians) and well over 2½ million square feet of combined floor space.

This combination of talents and facilities, backed by the corporate financial resources of General Precision, Inc., makes it possible to develop, produce and manage a space system from concept to application.

GENERAL PRECISION AND SPACE

CENTAUR A 32-lb. digital computer with a displacement of less than 0.6 cubic foot has been developed and is now being produced by General Precision for this space vehicle's guidance system.

VENUS STUDY A balloon-borne optical astro-tracker developed and produced by General Precision is being used in a series of explorations to photograph Venus for the first time from outside the earth's atmosphere.

13" by 18½" reproductions of these original paintings, suitable for framing, are available on request. Please write on your company letterhead.

TODAY'S DEMONSTRATED ACHIEVEMENTS SHAPE TOMORROW

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GENERAL PRECISION, INC.

PRINCIPAL OPERATING SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

Tarrytown, N.Y.

ARMY letters

"STUDY THE PAST"

● The amount of attention being given by the Army to future developments (tactical concepts and doctrine, weapons, organization, and the like) is highly commendable. However, our enthusiasm for the "new and different," creative thinking, bold approaches, and the like sometimes causes us to overlook the experiences of the great soldiers who preceded us. A little time in the library can pay great dividends.

This extract from the Annual Report of the Chief of Staff (General Douglas MacArthur) for the fiscal year ending 30 June 1935 is a case in point:

"Within all combat units up to and including the division, material heretofore carried for unforeseen contingencies must be thrown aside. Trust must be reposed in improved supply systems to bring these emergency equipments to the battlefield at the time and place they may be needed. Rolling reserves in ammunition, food, and other articles of daily consumption must be reduced to the safe minimum.

"This process of stripping from combat units every useless impediment must go further than the mere removal of contingent supplies and equipment. It will likewise affect organization. Difficulty in movement mounts rapidly with the size of the command, and the effort must be to reduce every echelon to the smallest possible size consistent with requisite power in shock and fire action. Homogeneity promotes mobility. The small units of the front lines—certain to include the battalion of infantry—must abandon the attempt to include within themselves every type of tactical power of which they may have occasional need. Emergency and special fires must be furnished by supporting troops separately organized so that the front line unit and its commander may concentrate upon one objective and one type of problem and carry their own tasks swiftly to completion. Each portion of the whole command must trust every other portion to perform its own missions properly and promptly. Our whole tactical organization must be developed in this concept.

"As there constantly appear upon the military horizon new weapons, with their new tactical possibilities and their new threats to our own safety, the instant reaction of every commander is to include them, as well as neutralizing agencies against them, within his own command and under his own direct control. Manifestly every organization should be so armed as to facilitate performance of its particular missions, both in offense and in defense. But in the interest of mobility, to say nothing of efficiency and economy, smaller units should so far as practicable be organized homogeneously. Reliance for special types of support and special classes of protection should be confidently placed in other members of the train suitably equipped for the purpose and likewise homogeneously organized."

BRIG. GEN. E. S. HARTSHORN, JR.
Fort Sill, Okla.

CARS OLD TO BRITISH ARMY

● The article on CARS in the July issue makes good sense. It describes in detail the combat arms regimental system which has proved itself in British Army history since the early seventeenth century.

If our Army should be evolving towards a system which an ally has perfected, we need not hide that fact. If, eventually, the best that any NATO member evolves is adopted by the rest, NATO will be stronger. And Americans would be wrong to assume that the label "Made in USA" alone is proof of superiority. We have borrowed from the British before; not only the tank and radar, chemical warfare agents, air-defense artillery and the T-10 parachute—even our language. We should take pride in a team spirit, and not be ashamed to give credit where credit is due. We should avoid the taint of imitation which here detracts from a good piece of work by Mr. Bourjaily.

LT. COL. EDWARD A. RAYMOND
APO 757, New York, N. Y.

NO MUSIC MAKERS

● Congratulations on an outstanding [September] issue. I do feel, however —and I mean this sincerely—that the title of your article "McNamara and His Band" is most unfortunate in many respects. In the Secretary and the men working with him, you have some very able people who should not, at this early stage, be classified as music makers or anything like

GOODYEAR

RADAR STRUCTURES: Another prime capability of Goodyear Aircraft

To "see" and stop missiles in space is Nike-Zeus mission. Since ICBM time-to-target is about 30 minutes, system has only few minutes to detect enemy missile, compute course, launch and guide Nike-Zeus missile to intercept point.

A NEW "EYE" FOR SIGHTING HOSTILE ICBM's

Only active defense against hostile ICBM's under development today is Army's Nike-Zeus anti-missile system. Nike-Zeus combines one of the most sensitive multiple-target radars yet perfected with the Free World's fastest interceptor missile. Object: detection and destruction of ICBM's flashing through space at close to 20,000 m.p.h.

As a leading producer of radar structures of all types, Goodyear Aircraft was selected to work with Bell Telephone Laboratories to develop, design and build the large acquisition radar transmitting and receiving antennas shown here. Working with Western Electric, the prime contractor, and a team of major Nike-Zeus subcontractors, Goodyear has already furnished operating prototypes of the antennas. And, currently, work is well under way on manufacturing techniques for volume production. For details on Goodyear's extensive experience in advanced radar structures write Goodyear Aircraft Corporation, Dept. 914WK, Akron 15, Ohio.

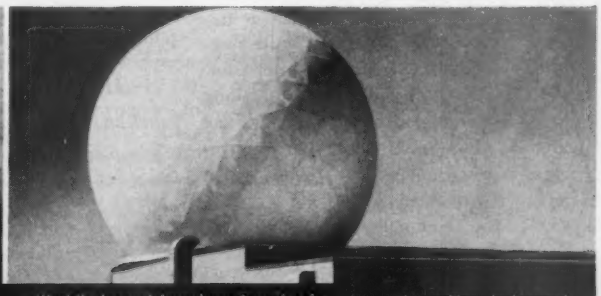
GOODYEAR

Plants in Litchfield Park, Arizona, and Akron, Ohio

GOODYEAR AIRCRAFT CORPORATION

The Technical Disciplines involved in these areas offer a challenging future for Engineers and Scientists at Goodyear Aircraft. Write today.

Goodyear-built transmitting antenna consists of three 80-ft. apertures in triangular lineup rotating continuously in azimuth while accurately slaved to the receiving antenna.



World's largest Luneberg lens for focusing radar echoes is housed in this 110-ft. radome. Radome contains 445 triangular plastic panels attached to a space-frame.

If it were a missile, the time for intercept would already be past.

Your anti-missile missile should already have been on the way to a positive destructive interception.

An essential part of any anti-missile defense system is an advanced multi-function, phased array radar-computer complex. This complex would permit the long range detection *and* selective tracking *and* labeling of vast numbers of space and reentry objects—including satellites, space vehicles, missile warheads and decoys. Needed is a radar system with beams which can be electronically steered in microseconds under the programming of an advanced computer. With such a radar it is possible to detect and track hundreds of targets while continuing the search for additional threats. Because this type of radar antenna makes no mechanical motion, it can be easily hardened to withstand the heat and blast of a nearby nuclear explosion.

Hughes has pioneered, designed, developed and produced many multi-function, phased array radar-computer systems for military operational use. We believe we are the only company that can make this statement.

Creating a new world with electronics

HUGHES

HUGHES AIRCRAFT COMPANY
GROUND SYSTEMS
FULLERTON, CALIFORNIA

that. To me it is very disrespectful and not called for in a service publication of such a high level.

COL. F. GORHAM BRIGHAM, JR.
West Newton, Mass.

ON SHOWING RATINGS

● Bravo to Colonel Legree on his letter "On Showing Ratings" [September]. It's unfortunate for those who have served under "the gutless ones" that officers with Colonel Legree's point of view aren't in a position to do something about it.

CAPT. J. G. EBERLING
Fort Wadsworth, N. Y.

● Congratulations on printing that fine letter by Colonel S. Legree on showing efficiency ratings.

I agree wholeheartedly that the new efficiency report form is designed for the weak-kneed who will be making out *our* reports.

I recommend that Legree's letter be reprinted in all publications dealing with the Active Army, and think it should be brought to the attention of those responsible for this atrocity.

Congratulations also on "Soldier of the Future," by Major Boyd T. Bashore. All I can say is True-True.

Please withhold my name.

CAPTAIN INFANTRY

EQUATION FOR SUCCESS

● On first starting to read Captain Dobsevage's Cerebration in the July issue, I was impressed with his analogy from physics—$M = E/V^2$. I hope he understands his military science better than he does physics. I think he does, because his point is basically sound.

Let me suggest a more precise analogy based on the same energy equation. Any fighting unit has an effective kinetic fighting energy which we shall call E. This, like kinetic energy in physics, is composed of mass M and velocity V, which in physics are in the relation $MV^2 = E$. The analog of physical mass is combat mass, which is composed of numbers of men and weapons and modulated by the firepower of these weapons. The analog of velocity is speed of movement and communications. In effect this V is speed of responsiveness, which is probably the most decisive factor in warfare. Since it is decisive, we can justify its being introduced into the fighting energy equation as an ascending exponential factor. Hence we find that fighting energy, or fighting effectiveness, E, is the product of the numbers of men and firepower, M, of a unit times the speed of its responsiveness squared, V^2.

Nathan Bedford Forrest is reputed to have already expressed this more succinctly as getting there first with the most. That is still true today, but we have squared the impact of "first" since we have been able to achieve a wider range of this variable in the equation from a foot-mounted soldier's two-and-a-half to three miles an hour through the mechanized infantry's 35 miles and up, up to the paratrooper's alleged 200 knots or so.

If, then, we let E equal our kinetic fighting energy, and E_2 equal that of our enemy, we can assume that if $E_1 > E_2$ we will win. Since $E = MV^2$ in either case, and since the energy M is more or less equal to our M (in the total strategic sense, at least) the road to victory is through increased V. Since he has radios (whose speed of communication is limited by the laws of Nature to 300 million meters per second) as well as motor vehicles and aircraft, we are brought down to one single, simple technique of victory: faster thinking, smarter commanders, particularly in the range from *squad* to *division*.

This faster-thinking, smarter commander is exactly what Captain Dobsevage urges—and I concur.

LT. COL. ROBERT H. CLAGETT, JR.
APO 28, New York, N. Y.

● I am flattered that Col. Clagett considered my Cerebration warranted a reply. If it stimulated thinking that was one of my goals.

My formula is not at all a physical one, for the mass of physical matter is not the mass of the principles of warfare. Mine is a military formula which states: "If the Mass of a conventional army with conventional weapons generates a certain effectiveness with its conventional Maneuver and conventional Firepower, and a highly effective, specially trained supra-maneuver, supra-firepower, infinitesimal Mass of manpower can generate greater effectiveness; then Mass can be equated with Firepower and Maneuver." Few believe that Mass can be equated to Firepower and Maneuver. This is in contravention of accepted thinking.

It does not matter if you take the kinetic energy formula and write $E = \frac{1}{2}MV^2$, or $^2E/M = V^2$, or $M = {}^2E/V^2$. The laws of algebra permit all that. And you are welcome to write a military formula which states that $MV^2 = E$. Colonel Clagett's M stands for *men and firepower;* his V for *speed of responsiveness;* his E for *effectiveness.* My V is *speed of maneuver,* and like

a vector has a direction; the E is *firepower for decision* delivered by men; the M is mass—that is, *conventional manpower with conventional weapons.*

Now for Darius the conventional weapon was the spear; for Caesar, the short sword and spear; for World War I, the Springfield; for World War II, the M1; for the future—you name it. We don't differ in our respect for ability. We hardly differ in our use of terms. And I think that Colonel Clagett can be converted to the view expressed in General Howze's "The Land Battle in an Atomic War" and my Cerebration, that special teams and special companies are needed for the proposed holocaust.

What we need are theorists who could find a way to have M incredibly small and EV incredibly large. To this force will go whatever are the spoils.

So you see that I am not using the formula for kinetic energy, nor Einstein's $E = MC^2$, but merely an equation that says: (1) Would that Manpower = Firepower + Speed of Application ($M = EV^2$); (2) if this is so, we need some further thought on how to achieve greatly increased and effective firepower in depth and frontage with far fewer men; (3) this may be done by creating a limited number of special companies that could face armies. How should such soldiers, noncommissioned officers and officers be trained and educated? That is our problem.

MAJ. A. P. DOBSEVAGE
Georgetown, Conn.

AGAINST CHANGING CARLISLE'S NAME

● Your editorial in the June issue suggesting that the name of Carlisle Barracks be changed to Fort George C. Marshall has been called to our attention by many citizens of this community—all of whom vigorously protest any change in the name of this historic institution.

Carlisle Barracks predates the Continental Army and while we hold the name of the late General Marshall in highest regard as a truly great American, we also have a great pride in the name Carlisle Barracks.

At present the community is engaged in a project to revive our Colonial architecture and to promote interest in the many places of historical significance—Carlisle Barracks being one of them. Your suggestion is at variance with the community plans for the future.

At a recent meeting of the Carlisle-Cumberland County Army Advisory Committee, I was instructed to inform you that the committee unanimously rejects any effort to change the name of Carlisle Barracks. If the idea is pursued we shall use every means at our command to prevent its accomplishment.

We hope that you and the members of the Association of the United States Army discontinue any efforts in this direction.

COL. ALLEN J. STEVENS

● Colonel Stevens, a member of AUSA, is Chairman of the Carlisle-Cumberland County Army Advisory Committee, Carlisle, Pa.—THE EDITORS.

THE OPEN DOOR AND MORALE

● It seems Sgt. Hahn Fugleman ["Advise—If You Dare," September] would like to see our Army revert to the days of lord-and-master. He would like to see the open-door policy of the company commander abolished. He feels this will give the soldier more self-respect as a stand-up-on-his-hind-legs male of the species. Does the good Sergeant realize that the open-door policy has done more for our self-respect than any other policy adopted by the Army? To know my CO will take a few minutes of his time does more for my morale and self-respect than the Sergeant and his counseling. I would like to add that I am proud of the SOB sergeants in my outfit, along with my self-respect.

PFC. JAMES J. BRENNAN
APO 176, New York, N. Y.

HELP FOR UNIT HISTORY

● For more than six months I have had order inquiries with several professional bookfinders for two volumes of historical record of the 11th Cavalry: F. T. Bonesteel, *The Eleventh Cavalry, 1901 to 1923* (Monterey, Calif., 1923), and Robert W. Fifield and others, *11th U. S. Cavalry, California-Mexican Border, 1941* (Los Angeles, Calif., 1941). None has been able to produce a copy for me.

Would you please publish this request as a plea for sale (preferably) or loan of either or both of these volumes? I assure any lender the volume(s) will be carefully handled and expeditiously returned.

I can be reached at Headquarters, 1st Reconnaissance Squadron, 11th Armored Cavalry, APO 305, New York, N. Y.

LT. COL. HOWARD F. WEHRLE III
APO 305, New York, N. Y.

AUXILIARY POWER SUPPLY

Direct conversion of heat to electricity offers the solution to the problems of auxiliary power in space.

New techniques of space charge neutralization are being developed at Ford Instrument Company under U.S. Air Force, U.S. Navy and company sponsored studies. This work offers the opportunity to obtain significant power densities with wide spaced plasma power diodes at cathode temperatures around 1200°C. Application studies currently being undertaken involve chemical, solar and nuclear heat sources. I.e

FORD INSTRUMENT CO.
DIVISION OF SPERRY RAND CORPORATION
31-10 Thomson Avenue, Long Island City 1, New York

Ford Instrument guidance and control components participated in these missile and space "firsts": First Free-World man-into-space vehicle (MERCURY-REDSTONE) • First operational ballistic missile (REDSTONE) • First successful launching of a Free-World satellite • First successfully recovered nose cone • First successful Free-World space probe.

A CREATIVE TEAM OF SCIENTIFIC, ENGINEERING AND PRODUCTION TALENT

ARMY authors

ARMY considers its biggest job in the months ahead is to provide all the help it can to the new Army now in training. To do this it will (1) seek out and publish articles that will be of assistance to the officers and men who have the job of bringing this new Army to a high state of battle readiness; and (2) explain to our civilian readers how the Army is getting along.

LT. COL. FORREST K. KLEINMAN flew to CONARC's headquarters at Fort Monroe and to the 2d Division at Fort Benning to develop the story of the build-up of STRAF. Colonel Kleinman, who retired early this year after 26 years of service, joined the Staff of ARMY Magazine as a Contributing Editor in August. During his active duty Col. Kleinman served in North Africa with the 3d Infantry Division and in Korea with the 24th Infantry Division; more recently, he had served as special writing assistant to Generals William F. Dean, W. G. Wyman, Bruce C. Clarke and Herbert Powell.

CAPT. ROBERT B. ASPREY, USMC inactive *(page 33)*, is a free lance writer who specializes in military subjects.

LT. DAVID J. W. WIDDER, Infantry *(page 38)*, was commissioned upon graduation from The Citadel in 1959. A qualified parachutist and jumpmaster, he is now a platoon leader with the 2d Airborne Battle Group, 503d Infantry Combat Team, on Okinawa.

BRIG. GEN. J. V. ANDERSON *(page 43)*, is the pseudonym of a retired general officer who has held high staff positions in the Pentagon, Europe, and the Far East.

CHARLES A. DODSON *(page 53)*, a retired sergeant first class, until recently was a member of ARMY's editorial staff. He is now editor of the Manchester (Tenn.) Times.

COL. JOHN J. DUFFY, Artillery *(page 56)*, was commissioned in 1935 and has had varied assignments. He is now in the Plans Section of CINCPAC.

MAJ. WALTER DARNELL JACOBS, Infantry, USAR *(page 60)*, who specializes in Soviet military and political affairs, has written on those subjects in U.S. and foreign military periodicals.

MAJ. GEN. AUBREY S. NEWMAN, USA, retired *(page 65)*, a 1925 graduate of West Point, commanded an infantry regiment in the Pacific during World War II, and later served as Assistant Commandant of the Armed Forces Staff College and as Chief of Staff of CONARC. General Newman now lives in Florida, where he has begun a second career as a writer. He has contributed more than forty articles to ARMY and its predecessors.

LT. COL. JAMES W. KERR, Infantry *(page 68)*, after a tour as chief of U.S. Liaison with the headquarters of French I Corps at Freiburg, Germany, is now at CONARC.

MAJ. CHARLES L. PECKHAM, Infantry *(page 70)*, is executive officer at Quarry Heights and assistant headquarters commandant of Caribbean Command.

MAJ. HARRY W. FRENCH, Infantry *(page 70)*, led a rifle platoon in Korea for a year, and since then has had varied service with troops and schools.

CWO JOHN P. CONLON, Ohio Army National Guard *(page 71)*, a frequent contributor, is an ordnance specialist who served in ETO and in Korea.

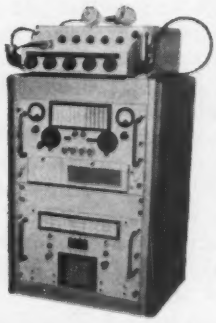
COL. HENRY E. KELLY, Infantry, retired *(page 71)*, is on the staff of HUMRRO's Infantry unit at Fort Benning.

COL. CHARLES D. Y. OSTROM, JR., Ordnance Corps *(page 72)*, is Chief of the U.S. Army R&D Liaison Group (Europe), an element of OCRD in Frankfurt charged with maintaining liaison with the European scientific community.

JULIAN HARTT *(page 78)*, a veteran Los Angeles newspaperman, is Aerospace Editor of the Los Angeles Examiner.

Faster, surer single sideband communications at vital Atlas, Titan, Minuteman missile sites

The United States Air Force is now taking delivery of SC-900 Series fully automatic 1KW single sideband transceivers developed and manufactured by General Dynamics/Electronics. This equipment will be installed at ATLAS, TITAN and MINUTEMAN missile sites and represents, in the truest sense, a real step ahead in the state of the art of communications. All tuning of the new General Dynamics/Electronics single sideband equipment is digital ■ The use of broadband techniques rather than a servo system results in faster tuning, simplicity and increased reliability ■ Emphasis on linearity, wide dynamic range and selectivity in the receiver RF circuits reduces interference from any nearby communications equipment to an absolute minimum ■ Self-contained noise blanker eliminates interference from pulse type noise without the need for a separate noise sensing antenna ■ Functional modular construction offers the maximum in ease of maintenance ■ And in addition to all of these operating advantages, General Dynamics/Electronics single sideband equipment is extremely compact, ideal for a wide range of portable and stationary communications applications.



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ARMY front and center

By Lt. Col. FORREST K. KLEINMAN
Contributing Editor

FINE DISPLAY OF POTENTIAL POWER

For the first time in 20 years, a Commander-in-Chief of the U.S. armed forces has seen an entire Army division arrayed for review with full field equipment. It was the first time in 20 years that anyone in the United States had seen such a sight.

This significant event occurred 12 October at Fort Bragg, N.C. The division was the 82d Airborne and the Commander-in-Chief looked as young and vigorous as his troops.

But a division review was just the beginning of what President Kennedy saw. Before the day was over, he was shown more than a thousand samples of what the U.S. Army can do—including a preview of the new Tactical Air Force-Army team STRIKE in action.

The name and number's the thing. The President's face lights up as he examines a trooper's dog tag during his visit to Fort Bragg on 12 October

The complete chain of high command was with the President plus 15 busloads of government officials, military attachés of 45 non-communist countries, and members of the press. One correspondent remarked that Mr. Khrushchev should have been along too. The feats of courage, military skill, and physical strength performed by the "soft decadent Americans" during the combat readiness demonstration might have opened his eyes.

They saw an answer to the armada of heavy Red tanks. They saw that conventional firepower bridges the battlefield gap between conventional and nuclear warfare. They saw that the weapons and equipment to make the U. S. Army the best armed in the world have already been developed, tested and perfected—awaiting only the mandate and money for mass production.

They also saw absolute perfection in the conduct of the demonstration itself. Not a single weapon —from .45 pistol to Honest John Rocket—missed the mark. In five solid hours of virtually continuous activity, there were no perceptible mistakes in timing. No miscues. No fumbles. No slips. No dogs!

The answer to the Red tank menace was delivered in many ways during the firing demonstration. But the most impressive version to some observers was that of the H-34 helicopter armed with the SS-10 anti-tank rocket. It came over a ridge line so fast and low, and fired unerringly at such long range, that its tank target wouldn't have had a ghost of a chance in combat.

The awesome capability of conventional firepower was first demonstrated by an air strike preparatory to the airdrop of a reinforced rifle company from the 101st Airborne Division. Rockets, bombs, and napalm delivered by successive flights of Mach 2 F-105 Thunderchiefs and F-100 Supersabres turned an amazingly large target area into an inferno.

Both then and during the Time on Target artillery demonstration, spectators were heard to murmur: "What more could a tactical nuclear shell do to the enemy?"

Spanking new self-propelled artillery of all calibers — compact, low and highly maneuverable — caught many professional eyes in the crowd. No doubt the Commander-in-Chief also recognized their importance to the Army in any kind of war. Throughout the demonstration he frequently conferred with military experts in his party.

At the other end of the Army's firepower spectrum, a .45 pistol shot knocked out two targets with a single bullet split on an axe edge. Firing at semiautomatic, an M14 rifleman shot out a target bullseye with 40 aimed shots in 42 seconds. Machine gunners with the M60 in assault fire showed the new weapon's amazing muzzle stability and accuracy.

The Special Warfare Center presentation appeared to be of special interest to the Commander-in-Chief. It covered every aspect of the subject from precision sky-diving and psychological warfare to a medical man's role as midwife in Laos.

No less impressive was the Ranger demonstration. It showed the confidence and sinew-building process by which this important activity exerts a tempering influence upon all Infantry units.

The final event of the day was a loading demonstration of the 82d Airborne's Immediate Ready Force. Alerted less than an hour before, it was obviously ready for flight into combat anywhere in the world.

Mr. Kennedy appeared deeply impressed, but not surprised. Why should he have been? Long before he took office he had advocated a larger Army with precisely such capabilities.

ONE ARMY ALL THE WAY

Secretary of the Army Stahr deftly touched on an old sore point during his 4 October address at the National Guard Convention — the question of preserving unit integrity. The question is a sore point not only with the National Guard, but with all components of the Army.

Mr. Stahr said: "I recognize the

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PUTTING IDEAS TO WORK FOR NATIONAL DEFENSE

Guard's great concern that the integrity of units called up shall be preserved. In this connection I draw your attention to the following quotation from a Department of the Army statement issued on the 12th of September, which made clear, I think, that every effort will be made to do so:

" 'National Guard personnel ordered to active duty will not be involuntarily reassigned to another unit, provided that the best interests of the Army are not impaired.'

"I want to underscore that last phrase: *provided that the best interests of the Army are not impaired.* I am sure that every member of the National Guard will agree that the best interests of the Army and the Nation which it serves must always come first. We are all proud of being 'one-Army,' but we must be more than 'one-Army' in pride, prestige, privilege, and prerogatives. We must be 'one-Army' in our professional attitude, in our sense of responsibility for the national security, in our spirit of unselfish service no matter what we are called upon to do, in our striving for excellence—'one-Army' in judging every decision by one single over-riding criterion: does it increase the Army's combat effectiveness?"

Many who read the Secretary's pointed statement may think that Mr. Stahr's own last phrase also deserves to be underscored and related directly to his subject: *Does preserving the integrity of units called up from reserve increase the Army's combat effectiveness?*

Past experience may suggest a negative answer to the question but certainly no adverse reflection upon either unit or individual merit. In World War I, 6 of the 8 U. S. Divisions judged "excellent or superior" by the German High Command were National Guard Divisions. In World War II, most battalions and virtually all companies of crack regular divisions were commanded by reserve officers.

An unbiased answer can be arrived at by a sort of *reductio ad absurdum* logic if the question is considered in the light of three hypotheses. The hypotheses assume the three most significant possibil-

ARMY editorials

Resolution in the Face of Adversity

When General Taylor returns from South Vietnam he will report to the President on the realities of the situation as he found it. If a non-communist South Vietnam is vital to the interests of the United States and if South Vietnam cannot remain non-communist without the help of U.S. fighting men, then troops ought to be committed. And in numbers great enough to master the situation promptly. But the decision, whether no or yes, should be made, not out of doubts but out of resoluteness: out of the certainty that boldly conceived action is the best action.

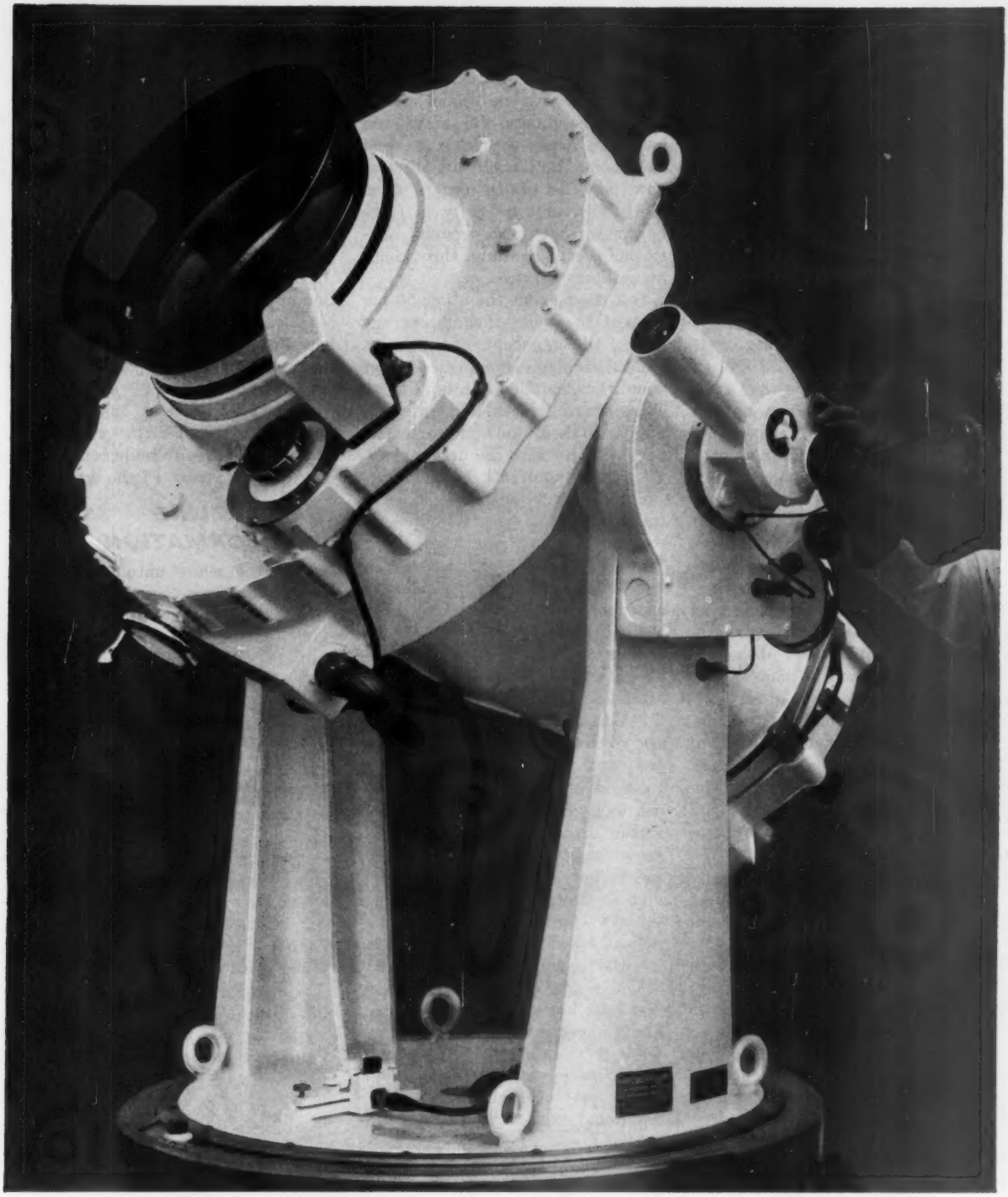
Hesitance and irresolution are a dangerous internal enemy. If U.S. forces are needed in South Vietnam all the doubters prating of logistical difficulties, of the prevalence of disease and the lack of sanitation, of the danger of becoming bogged down in an Asiatic war cannot alter the fact. If a dirty and dangerous job has to be done it can be done.

On Doctrinal Disputes

There's a theory going around that says we are in danger of destroying our nuclear credibility by building up our conventional power. Surely this must be the first time in all recorded history that a nation is said to be weaker because it is making itself stronger. If we were penalizing our nuclear deterrent to build up our conventional power, there might be an argument. But no one can argue that. There has been no cutback in SAC; indeed, the air alert has been strengthened. There has been no cutback in the ICBM or in the nuclear submarine/Polaris programs; indeed, they are being hastened.

If this theory had any validity, everything could be fixed in a jiffy. Call off the build-up, cancel the draft quotas, send the newly mobilized Reserve and National Guard outfits home, and go back to where we were a few months ago.

We fear these theorists are victims of doctrinal hair-splitting. For almost a generation colleges and universities, foundations, research institutions, and other groups have developed an interest in the study of national military policy, strategy and doctrine. All this is good so long as it deals in hard-headed realities. But when it drifts into hair-splitting doctrinal disputes that rival the most precious theological discriminations of medieval monks the security of the United States is not well served. We are, as some non-hair-splitter once said, confronted with the facts of communist imperialism and not the theory of it. And the facts say that national military policy requires military forces capable of bringing power to bear across the full spectrum of conflict: from the man with the rifle, who has no one in front of him except the enemy, to the nuclear-carrying ICBM launched from a silo deep in the bowels of the Middle West. There's work enough for all if we just turn to it.



This camera watches the birdie

This is a ballistic camera, designed to photograph a missile in flight, and check its trajectory against a precise background of stars to detect the slightest deviation from course. It is the largest accurate ballistic camera ever built. Its 8-element, 600-mm, f/2 lens has an accuracy of 1 part in 200,000. Though the shutter is 12 inches in diameter, it opens and closes in 2 milliseconds. The entire instrument, including its unique lens and shutter, was designed and manufactured by the Nortronics Division of Northrop.

NORTHROP

ities in comparing the professional competence and physical vigor of personnel in reserve force units with that of Active Army personnel in the same ranks and military occupational specialties. The comparisons apply any time from entrance on active duty until reserve force units have completed their 13-week Intensified Combat Training Program: (1) markedly superior to active personnel; (2) markedly inferior; and (3) negligible difference.

If the first hypothesis were true, many guardsmen and reservists should be transferred to higher priority Active Army units as soon as possible because obviously this would improve the combat effectiveness of the Army as a whole. If the second hypothesis were true, it is no less obvious that many guardsmen and reservists in tactical units should be replaced as soon as possible with more professionally qualified and physically able men. In fact, it has always been the patriotic duty of any soldier who finds himself physically or professionally unable to perform his duties properly to volunteer for a more suitable assignment. The duty is particularly binding upon soldiers in positions of combat command.

As their years advance, many professionally competent soldiers of all components have found themselves unequal to the physical and mental demands of field duty with troops. So they continue to perform valuable service to the Army in other assignments.

The third hypothesis—little or no difference in over-all caliber of personnel—poses much the most likely possibility, particularly after reserve force units have completed the 13-week Intensified Combat Training Program. In its survival-of-the-fittest training environment, soldiers of all ranks either shape up or ship out fast. So it is easy to assume that the third hypothesis is true, and to view the question of preserving unit integrity accordingly.

What would it be like to serve in a reserve force outfit that preserves unit integrity? At first, it might seem pretty good to the soldier who entered active duty with the unit. He is with his school mates, friends, neighbors. He may even have the same boss that he had back home. Better yet, his old boss now may be taking orders from him! With unit integrity in force he knows that these personal relationships will continue throughout his military service.

But what about the other 50 per cent of the unit—the officers and men of all components of the Army, and all civilian communities of our country, who filled the unit up to TO strength? Does unit integrity apply to them too? If so, where does it stop—with the first replacement, the hundredth or the thousandth? Wherever it stops, right there will be the ultimate line of cleavage in the unit between the "insiders" and the "outsiders."

Which will furnish all cadres and other levies—including levies for combat replacements such as the one that transferred nearly half the 3d Infantry Division to the 1st after Kasserine Pass in World War II? Certainly not the "ins" who are covered by the unit integrity assurance policy!

Worst of all is what could happen to such a unit after it is committed to combat. In any kind of shooting war, an entire company can be lost in a single action. If a high percentage of the unit is from the same home town, the psychological effect of the loss will be greatly magnified. Not only will it inflict a heart-breaking tragedy upon the home community, but an unduly severe blow to the general public's morale and will to persevere in the struggle. Some American towns—even states—still bear emotional scars from World War II battles in which units that observed unit integrity suffered heavy casualties.

The key word in this analysis—just as in the criterion that prompted it—is combat. No one can dispute the contention advanced by some guardsmen and reservists that keeping their units intact in active service would ease the transition to reserve status upon completion of 12 months active duty tours. But this contention, like all others that argue an administrative advantage for unit integrity, only begs the question. Moreover, guard and reserve administrators have demonstrated their reorganizational ability too often since World War I for anyone to doubt that they can reconstitute their units upon their release from active duty.

Thus viewed, Mr. Stahr's question appears purely rhetorical. Perhaps this is the conclusion that he hoped his audience would come to. Be that as it may, parochialism in any guise is harmful to the Army's combat effectiveness. Instead of "unit integrity," the rightful watchword for all components today is: "one Army all the way!"

ON MUZZLING MISINFORMATION

Among the many untold tales of Korea is one so pertinent in today's tense situation that it deserves recall from limbo. Because the incident is related here to point a timely moral rather than an accusing finger, all names are omitted but the hero's—Corporal Paul DeGagne.

It was Corporal DeGagne who overheard the breath-stopping word one torrid July (1950) day in the 24th Division press room. The word was used by a noted journalist who was filing a news story to Tokyo by radio-telephone. The journalist said he'd gotten it from a front-line intelligence officer.

The word was GAS!

DeGagne rocketed out the door and returned with a major from the Division G3 Section.

"That story you are filing is false," the major told the journalist. "There has been no enemy gas attack against our troops."

"But the intelligence officer who gave us the story was an eyewitness," the journalist said.

In desperation, the Major drew upon his imagination. "Just a hallucination. The medics have evacuated him as a battle fatigue case."

The journalist's companion, a Front Page character, was unconvinced. "Kill your story if you want to, but don't hang up that phone! I want proof before I give up my chance at something as big as this."

genus: homo • species: sapiens discipline: factors engineering

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"All right, I'll give it to you," said the Major, and he sent Corporal DeGagne to fetch the Division G2, Surgeon and Chemical Officer.

At this point in reconstructing the incident, it should be emphasized that military censorship of news stories from Korea was not adopted until many weeks after hostilities started. News reports phoned from Korea to Tokyo press agencies could be relayed paragraph by paragraph to the United States via short wave radio. Throughout the incident the gas attack story was only a few minutes away from world-wide newscasts.

Realizing this, the Major asked the correspondent at the phone to put a "hold for confirmation" on the entire story lest a broken connection or over-eagerness at his Tokyo office result in a news bulletin going on the air. The journalist acceded.

Presently, the division surgeon appeared and announced that there were no chemical warfare casualties at any of our aid stations. The division chemical officer testified that no chemical of any kind had been used by the enemy to date. And the G2 capped the proof by stating that the North Korean Army didn't even possess an offensive chemical warfare capability.

But the gas flap wasn't quite ended.

"I still have a story," said the Front Page character. "I'll simply attribute the gas attack report to the unit intelligence officer, and follow up with what I've heard here."

"If you do," the Major said grimly, "there will be a statement by General Dean on all news wires tonight condemning that kind of journalism."

"And my paper will print his statement on the front page," said the representative of a great Midwestern daily.

"Mine will probably use it as an editorial," another well known newspaperman said.

In the teeth of such disapproval from the deans of the press, the Front Page character slipped on a cheesy smile and said: "Can't you see that I'm only pulling the Major's leg?"

That night the unit intelligence officer concerned was evacuated with a diagnosis of battle fatigue. Next day both the division staff and the correspondents had more important things to occupy their minds. The entire incident was relegated to limbo.

Now that it has been recalled, however, let us consider its implications in the light of today's military possibilities. In doing so, we should keep in mind that this was not an isolated incident. Much misinformation actually did reach the radio sets and front pages of the world during the early weeks of the Korean conflict.

Fortunately, most of the false stories were harmless, even ridiculous. For example, one widely published front-line feature story described the North Korean "Snooper Dog." According to an "eyewitness," the author of the story stated, the enemy was using bird dogs to point out our heavy weapons positions, CPs, and ammo dumps for their artillery observers!

Not so harmless were the initial news stories ridiculing the arms, equipment and training of the North Korean Army. Despite intelligence reports to the contrary, those press dispatches exerted an unhealthy influence all the way back to Washington.

Will the conditions that spawned public misinformation in the early months of the Korean conflict differ greatly from the conditions at the outset of any future war?

Certainly, human nature has not changed during the past decade. We may be sure that there will be credulous and scoop-seeking reporters among the hundreds of correspondents who will swarm over any future theater of operations. We may be sure that there will be stragglers with "everyone was killed but me" alibis. As always, some minds will break down under the stress of battle and produce hallucinations.

In the future, however, misinformation from such sources is most likely to concern nuclear weapons, regardless of whether or not they are actually employed. As any psychiatric case worker can testify, unstable minds often relate their phantasies to subjects currently in the news. Moreover, even the sanest soldier is likely to see a mushroom cloud mirage on the horizon—after all that he has heard and read about nuclear warfare.

The speed with which misinformation can be disseminated is certainly no less today than it was in Korea. The commercial communication net encompasses any place in the world that Army units might be sent to repel aggression or suppress a brushfire war. In the absence of military censorship, it will be possible in the future—as in Korea—for military misinformation to reach a news broadcaster in the United States before the truth of the same event reaches the field army commander.

That this is no exaggeration is demonstrated by the fact that the Secretary of Defense learned from a newspaper editor that General Dean had been lost at Taejon. In that case, the news story was true. But what if the gas attack story had reached the public the same speedy way?

Consider what would have been the emotional effect upon the American people and their leaders. Consider, too, how difficult it is for official denials to eradicate an impression on the public mind once it has been created by a dramatic news story—however untrue. From the very outset of the Korean conflict, President Truman was under heavy public pressure to employ the A-bomb in Korea. As Lloyd Norman showed in ARMY'S Korean anniversary issue (June, 1960), the President had to make his early decisions on the basis of incomplete and fast-changing information. Is it possible that the emotional impact of the gas attack story might have tipped the scales?

Whether or not it would have been better to have employed the A-bomb at the outset of the Korean conflict may be debatable. But there can be no doubt that a similar escalation in a limited war situation today would be extremely dangerous. Therefore, we must be

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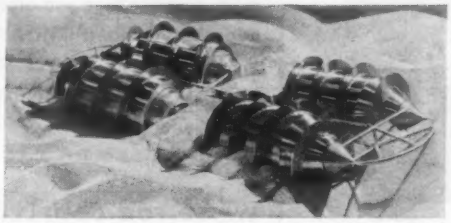
Scientific areas now under study: ■ **Aero-Space** ■ **Sea Operations** ■ **Land Operations** ■ **Biological Systems** ■ **Technical Specialties**



Moon-Roving Concept—This early model moon rover utilizes the principle of the Archimedes screw . . . and is just one of a number of vehicle types under study for known lunar conditions.

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on guard against the irrational factors that could trigger escalation.

Thoughtful consideration should be given now to the possibility of a false nuclear attack story reaching the public at the outset of a limited war in the future. Certainly, the Cuban fiasco offers no assurance that the decision-making process in Government is any more immune to emotional influence today than it was in the days of "Remember the Maine."

We dare not rely on the chance that there will be a corporal of DeGagne's acute hearing, mind, and guts at the right place and the right time again. We must take steps to muzzle military misinformation beforehand.

We should plan now to monitor all communication facilities in the theater of operations at the very outset of hostilities. A highly qualified public information team, including military censorship personnel, should be pre-designated, trained and alerted to fly in with the STRAC spearhead or any other force that we commit at the opening of hostilities anywhere in the world.

Never again should we wait until responsible newsmen demand the institution of military censorship—as we did in Korea. We must provide a screen against security violations and misinformation from the beginning.

Orientation of the press prior to accreditation might well include a session on the abnormal psychology of combat. At least they should be warned in advance that stragglers and battle-shocked wounded men are unreliable news sources. Many of the early news stories in the Korean conflict came from precisely such sources.

It is just as important that we act upon the fact that most of the public misinformation disseminated during the Korean conflict originated with soldiers. There is real need to orient all ranks in advance upon their proper relationship with the press. If ever a soldier thinks he sees a mushroom cloud rise on a battlefield of the future, is it too much to expect that he report it to his military superior instead of the nearest newspaper reporter?

Scrappy infighter with a seven ton punch

August 10, 1961: an F-105 crouched on the runway of Eglin Air Force base. Clutched to its belly and wings were twenty-six 565 pound bombs. Carrying more weight than a Flying Fortress, with no auxiliary assistance, the Thunderchief climbed for the overcast. When the simulated strike was completed, the F-105 had smashed every weight/size record in the logbook. Plus: it can carry 4000 different weapon combinations, including thermo-nuclear. Can qualify for 15 different missions. Can support Army ground troops at 250 mph, can hit the enemy at 1400. Will strike any target, any time, in any weather. Is now with the United States Air Force, here and over Europe.

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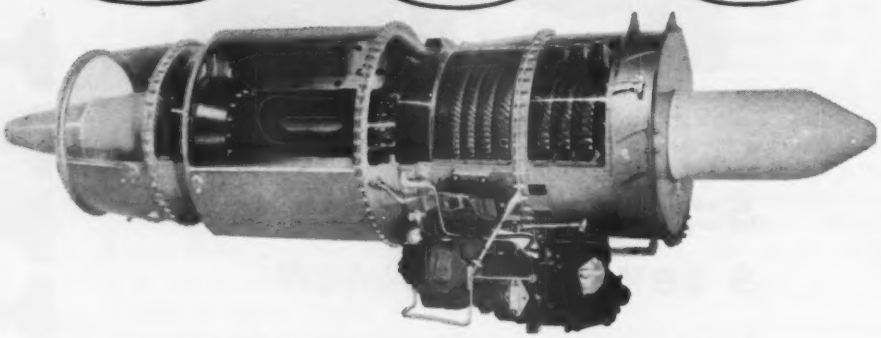

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Add a free turbine, and the J60 becomes a turboshaft engine, developing 4,050 shaft horsepower. Two of these turboshaft engines will give advanced helicopters power to lift nine tons. This version of the J60 is also projected for VTOL aircraft.

A modified J60 for industrial uses will supply power for pumps, compressors, electric generators — and can be adapted for use in ships and heavy earth-moving vehicles.

Whatever its application, the J60's simple, rugged design ensures high reliability and easy maintenance.

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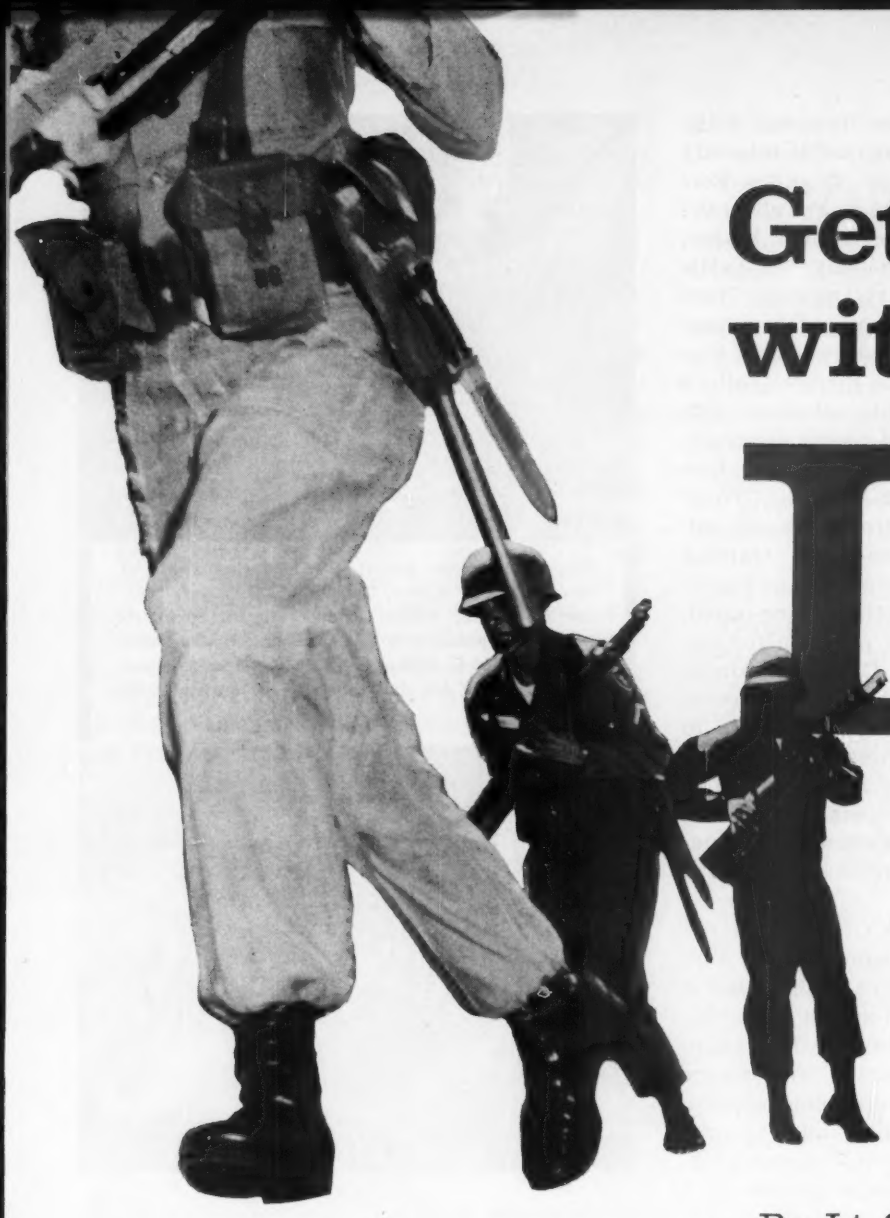


Getting with IT

By Lt. Colonel
FORREST K. KLEINMAN

YOU DON'T GET the impact of IT at first glance when you visit Fort Monroe these days. The ancient oaks that shaded Captain John Smith, the greensward where Sergeant Major Edgar Allan Poe paraded, the ramparts that First Lieutenant Robert E. Lee reinforced, the lime-washed quarters where Abraham Lincoln pondered the preservation of the United States—all look much the same as before.

Nor when you enter the old red-brick buildings that now house the staff of the United States Continental Army Command, do you see any overt sign of IT. You see a lot of busy people in the desk-crammed rooms. But there has always been a lot of busy people on the staff of a command with these important responsibilities: (1) ground defense of the Continental United States; (2) combat development for the Army; (3) training and military education of the Army; (4) development and control of the Reserve Forces and ROTC; (5) plans, direction and control of logistical activities in support of the Active Army and Reserve Forces.

Not until you sit down by their plan-laden desks and talk eye-to-eye with the young-old pros of the staff do you really begin to get the feel of IT. Yet you still have difficulty naming what you see in their eyes and hear in their voices. *A sense of urgency* comes to mind, but the label seems inadequate. So you try again and come up with: *Purposeful Intensity.*

Four days later you conclude that just plain

IT is apt enough. For Intensified Training is the practical application of the purposeful intensity that you find everywhere you go—from the Fort Monroe office of General Herbert B. Powell to the Fort Benning foxhole of Private Willie J. Waller, Alfa Team, 1st Squad, A Company, 2d Battle Group, 9th Infantry, 2d Infantry Division, Third U.S. Army. And though the chain of command is long and multi-linked, you find no loss of current in transmission. The look in Private Waller's 17-year old eyes, as he lays his automatic rifle on the most dangerous route of enemy approach, is just as intense and remarkably like the look in General Powell's eyes when he says: "We're going at it faster than ever before. But our soldiers are responding to time-tested training methods faster than ever before."

Not only are the training methods time-tested, you soon learn, but the overall program for employing them. The Intensified Combat Training Program (ICTP) that Active Army and Reserve Forces units are now undergoing is designed to accelerate their tactical readiness for early deployment. But it is *not* a hasty improvization to meet the current international crisis. Rather it is the end product of years of study, scientific evaluation, tests, and prior preparation in every related field of military endeavor.

As far back as 1957, when USCONARC received its present designation under General W. G. Wyman, it was recognized that never again would it be possible to train divisions for two years (as in World War II) or even 14 months (as in Korea) before deploying them in any future emergency. Vigorous efforts were being applied, even then, to improve training and thereby shorten the time required. Social science techniques (through HUMRRO) were teamed with military experience to speed solution of the problem.

When General Bruce C. Clarke assumed command of USCONARC in 1958, he gave the problem the highest priority at his very first meeting with his staff. As guidance for their efforts and those of commanders in the field, he laid down five fundamental principles: (1) build on what we already have that is usable; (2) eliminate false starts and extensive trial and error by thinking out projects in advance; (3) concentrate on the essential, eliminate the non-essential; (4) do things concurrently instead of consecutively; (5) maintain continuity of effort.

The years of preparation

Practical applications of the principles soon appeared everywhere. Army units throughout the country found many ways that they could get more training out of an eight-hour training day. Administrative marches to and from training areas became tactical problems involving the use of advance and flank guards, camouflage, dispersion, CBR, and air defense. Meal times and even rest periods became occasions for concurrent tactical training.

Map and grease pencil are basic tools at all combat levels. Above, Col. John E. Arthur, commander of 1st Battle Group, 11th Inf., explains a tactical problem to two officers. Below, Maj. Gen. Charles H. Chase is briefed by a staff officer during one of his daily inspection tours of field training

Checkerboard scheduling of unrelated subjects was replaced by blocks of hours devoted to the same subject. Instead of scheduling two-hour weekly meetings, National Guard and Reserve units lumped their drill periods into week-end sessions devoted to continuous tactical training in the field.

The principle of "build on what we already have" was found to have many more time-saving applications in personnel assignments than previously recognized. A high percentage of the technical skills required by the modern Army already exist in industry and business. Using them efficiently can drastically reduce mobilization and training time. For example, there is no shortage of truck drivers and bulldozer operators of mili-

tary age in the civilian manpower pool. They need only basic training to be combat ready to do the same jobs in the Army. Streamlined procedures for identifying and verifying such transferable skills are now in use.

Soldier-scientist teams of HUMRRO found that training time for many military specialties can be shortened by concentrating on what the soldier *needs to know* to do his specific job. They also found that teaching military subjects in their "functional context"—as in Trainfire—speeds the learning process. These findings are being utilized today in teaching a wide variety of military skills, ranging from map reading and leadership to tank gunnery and small-unit tactics.

Long before the Berlin crisis, USCONARC planners realized that the prolonged periods of post M-Day training for Active Army divisions in World War II, and National Guard divisions in Korea, is not only impossible in a present-day emergency, but *unnecessary*. Accordingly, they developed an eight-week Intensified Combat Training Program for use by STRAF units when alerted for emergency missions.

As you leaf through the detailed programs for various types of units, the date of one catches your eye. The program is for the Headquarters and Headquarters Company, Infantry Division. It is dated 1 August *1960!*

Opening it, you find no close-order drill, no frills, no hint of nice-to-know skills. Instead you find the kind of training that conditions men for combat: night operations (30 per cent of all training time); combined-arms exercises; live firing exercises; fire support coordination. Training time for the first six weeks is based upon a 48-hour, six-day week. For the last two weeks, which are devoted to tactical field exercises exclusively, no minimum number of hours is given. Recognizing that unit readiness varies widely, the program grants considerable latitude to the commanders responsible for implementing it.

They're getting on with it

That is the type of training program now being used by the 1st and 2d Infantry Divisions and the 2d Armored Division to complete their conversion from training to combat type divisions. The same eight-week program, preceded by a five-week refresher course, will be followed by the National Guard divisions called to active duty.

How is IT working? To find out, you fly to Fort Benning and visit the 2d Infantry Division. On the

Field maintenance, an important part of the intensified Combat Training Program, also takes teamwork and leadership

Machine gunners dig and occupy hasty defense positions in Fort Benning woods. Does the one below have his gun laid on an assigned fire sector while he digs? If not, no doubt his tactical error was corrected by a superior who knows that men will do in combat exactly what they do in training

way to the division headquarters, you ride through a ghost town. Barracks after barracks, street after street, are passed without a single soldier in sight!

When you meet Major General Charles H. Chase, oft-decorated veteran of Bastogne and the Normandy and Holland airborne assaults, you learn why the Indianhead Division's area looks like a ghost town. Every Monday morning, the 2d Division moves into the field. From the time they leave their barracks until they return Thursday night, everything they do is *tactical.* This means that virtually every soldier fit for duty in the division is spending about 80 hours a week thinking, moving, working, eating, resting, and even sleeping just as he would in combat.

Fridays and Saturdays are devoted to care and cleaning of equipment, inspections, and instruction in such subjects as character guidance and troop information. Meanwhile commanders and staffs reconnoiter their assigned training areas and plan the next week's tactical training. On Sunday, some of them even get to spend a few hours with their wives and girl friends.

"What has impressed you most about your division's training so far?" you ask General Chase.

"The willingness of all ranks to get on with it," he replies. And though his voice is matter-of-fact there is the same purposeful intensity in his eyes that you've seen all up the line.

Jeeping down the line on a red dusty road, you hear the 2d Division long before you see it. The rolling green hills crackle with rifle fire, punctuated by the *thump* of mortars and grenades. The atmosphere of men at war becomes so realistic that you catch yourself hunching lower in your seat when a machine gun begins to stammer d-d-d-d-death!

It's mostly blanks and TNT blocks at this stage of training, your escort explains. He is Major Darwin C. Miller, the division PIO.

"Sounds like they've given your division a big issue of blanks," you say.

"They have," he answers. And you hope that there's also plenty of *live* stuff in stock to supply the division. But you need not mention this to Major Miller. He was a company commander with the 19th Infantry in Korea, and he knows as well as you do that a rifle without ammunition is only a club.

Meanwhile, back at the CP

You come to the division's advance command post—well dispersed, camouflaged, and away from the too obvious road junction. Though the division is still in the basic unit phase of training, the CP looks as if a full-scale battle is in progress. Sweat-beaded staff officers are poring over maps. Mes-

The man with the controllable and selective weapon in his hand continues to be at the apex of the Army's capability for applying military force proportionate to the requirements and he is therefore the focal point of all tactical training efforts. Here a 2d Division squad leader points out route of maneuver *(above)* and signals for squad to advance *(below)*

sengers hurry in and out of tents. Everyone is helmeted and carries his gas mask and weapon.

On the operations map you see red as well as blue symbols, and you realize that a command post exercise is being conducted. While the tactical units—the line men of the division—learn how to charge and block, the quarterbacks are learning how to pick the winning plays and call the right signals. Soon they will begin to team up for scrimmage.

You move on down the road to the CP of the 2d Battle Group, 9th Infantry. En route, you scan both sides of the road in hopes of seeing some of the training activity that you can hear all around you. But none of it is in sight from the open road. Later you recall with a start that some of the trees and bushes you passed had eyes.

At the battle group's CP you meet a company commander—the most significant officer in any army as evinced by the fact that Alexander, Hannibal, Napoleon and the other stellar commanders of history are called Great *Captains*. So you are curious about the caliber of captains that command the division's basic organization, and you sit down to chat with Captain Aylwyn D. Williams who commands Company C.

He is a tall, rangy officer with a MacArthur nose and infantry-blue eyes. A distinguished military graduate of the University of Pennsylvania, ('51), Captain Williams served in Korea as a rifle platoon leader in the 35th Infantry. He is a graduate of the Infantry School's Advanced Course, the

Airborne School, the Ranger School, and the Command and General Staff College.

As you note these impressive qualifications, you compare them with those of the company commanders who entered combat in World War II. Even the crack 3d Division, you recall, had few company commanders with more than two years of active service when the division was committed in the North African landings.

Captain Williams' thoughts on training reflect his experience, and the division's decentralized training policy enables him to put his ideas to work. Every Friday—one of the few days that the division is in barracks—he takes his company on a five-mile run. No, not a speed march of alternate walking and trotting, but five miles of continuous double-time.

"Nobody drops out," he says. "If we have to carry or even drag a man in, nobody drops out. We're never going to leave a man behind in combat as some units did in Korea!"

The psychological effects of the runs are just as important as the physical conditioning benefit, Captain Williams has found. "It builds confidence and a feeling of unity in the men. It also shows them that they still have a lot left in reserve after they come back from the field."

Last Friday, Company C ran six miles instead of five. But nobody dropped out.

Nighttime is for training

Captain Williams has an equally emphatic opinion on the importance of night training. "Nuclear or no, we're going to have to do most of our moving and fighting at night. So that's the way we are training."

Last night his company didn't go into tactical bivouac until 0200. Tomorrow night the entire company will be out on patrol problems. Tonight, he has a special job for what he calls his "above-average people"—men who excel in stamina and initiative. They will form an aggressor force to raid the company's bivouac area and test its measures of local security.

The captain's intense interest in tactics prompts a somewhat loaded question from you: "What do

A 2d Division 105 howitzer crew "slams the door on an ace ought nickel"—which is what they call loading a live round

you think of taking time from tactical training for such subjects as troop information?"

"It's not taken away from tactics at all," he replies. "Troop information ties right in with what we're doing in the field. It motivates the men to put out their best efforts."

Moving through the battle group's training area, you spot a rifle platoon deployed in an attack formation. It is the 2d Platoon of Company A, you learn from the company commander—Captain William G. Peters, Class of '55, USMA. He grants permission to follow the platoon as it crosses the line of departure.

As you walk through the underbrush with one eye out for rattlesnakes, you notice that the platoon is maneuvering without oral commands. Only arm-and-hand signals are necessary to supplement the original attack order.

Some mistakes are made as the attack progresses. But making mistakes is an essential part of the learning process. Captain Peters takes note of them for critique and correction.

What impresses you most is the vigor and speed with which the platoon presses the final assault. You'd never know, by the way they move up the hill, that these lean young men have been training for 12 hours so far today. Quickly and smoothly, the platoon takes positions to defend the objective against counterattack.

You interrupt Sergeant Charles Gemberling at his digging just long enough for a few questions. Sergeant Gemberling is the Alfa Team leader of the 1st Squad. He has served 31 months of a three-year enlistment. He had planned to go back to school, but his enlistment has been extended.

How does he feel about this involuntary change of his plans and the world situation that prompted it?

He shrugs and says, "I just take it as it goes."

How do his men feel about the long training hours?

"Morale and discipline have never been better!"

Does he attribute this to what they have been reading in the newspapers lately?

"Not especially. More time in the field and less time in town just makes better soldiers!"

To the youngest man in the platoon, Private Willie J. Waller, you pose the biggest question. But Waller is a big man for his 17 years—has to be to lug a heavy automatic rifle around night and day after only six months in the Army.

A game in which boys become men fast

How does Private Waller feel about the possibility of fighting a nuclear war?

"I do the best I can in any kind of war. And I do pretty good, I think. I'm no kid civilian any more. I know a lot of things I never knew before. Like how to take care of myself in the field. How to keep going when I'm tired. How to use different kinds of weapons. How to beat the enemy at his own game. And I'm learning more every day."

You walk on to the foxhole of Private James E. Pate, a 23-year-old selectee from Nashville, Tennessee. Pate is the platoon radio operator and he is proud of his instrument's range and performance. But he's quick to admit that it will never eliminate the need for foot messengers in combat.

How does Private Pate feel about the possibility that the 2d Division may be deployed overseas in the near future?

"I came into the Army to do a job and if that's what it calls for, I just do it. That's all."

What about his girl friend—how does she feel about him going overseas?

"I already got my Dear John letter," Pate says with a shrug.

The answers to your questions are variously worded as you tour the 2d Division, but their character is the same. You hear neither breast-beating boasts nor laments of self-pity. Though many of the soldiers you interview are selectees, the word that best describes the common attitude is: *professional.*

On your second day with the Indianhead Division you realize that you have omitted a vital link in the chain of command: the battle group commander. So you visit Colonel John E. Arthur at the CP of the 1st Battle Group, 11th Infantry. An Army Brat with 20 years of service, Colonel Arthur was born at Fort Monroe (natch!). He is an ROTC graduate of Boston University who was integrated into the Regular Army following World War II service in the Pacific theater with the Sixth U. S. Army.

Call their own plays

As he discusses the training of his battle group, you find yourself wishing for a tape recorder. He expresses his thoughts so succinctly yet vividly that you know your pencil won't do him justice.

The keystone of his training concept is the delegation of responsibility to junior officers. Each week he and his staff prepare a series of tactical problems for his companies to rotate through in the context of a continuous tactical situation. Company commanders are given no advance reconnaissance of the terrain involved nor are they told where to mess and bivouac. Such action and decisions must be made on the ground as indicated by tactical developments—just as they are in actual combat. Thus, even squad problems provide concurrent company training in both tactics and field administration. At the same time, logistical and administrative support elements of the battle group perform their functions under combat conditions.

Colonel Arthur has buttressed his concept, and

prevented bad habit-forming repetition of tactical errors, by establishing three battle group inspection teams. One team is headed by his deputy, one by his G3, and the third team by himself. The three teams operate on a schedule that rotates them daily through at least one full phase of a problem with every company. Their notes are used both for on-the-spot correction and for the Friday night critique Colonel Arthur conducts with his staff and company commanders.

The weekly critique is not a "chewing session," he emphasizes. Rather it is an exchange of ideas. Everyone gets the benefit of the best ideas and experience developed during the week's work.

Next week, Colonel Arthur plans to pit company against company in tactical exercises employing armored personnel carriers. Concurrently, platoon live fire tests will be conducted. He credits much of his battle group's rapid training progress to the field performance of his career noncommissioned officers.

Sgt. Dalmer S. Cox, veteran of 2d Division battles in Korea, applies his combat experience as a 4.2-inch mortar forward observer to present-day combat training of the division. He's pointing out a target to his company commander

You've talked with many career noncommissioned officers in the last two days, and all have the same comment on the postwar problem of NCO prestige. As far as the 2d Division is concerned the problem is solved. It was solved, they say, as soon as the division went into the field. Now both their superiors and subordinates *must use them as leaders!*

Before you leave Fort Benning, you must meet Sergeant Dalmer S. Cox who joined the 2d Division in 1948 and served as a mortar forward observer when the division was committed to Korean combat. Today Sergeant Cox looks like a model for a painting entitled "The Backbone of the Army."

In answer to your obvious question, he is convincingly eloquent: "No doubt about it, sir. The division is in better shape now than it was at the same stage prior to Korea. It's better for two reasons—potential and people. . . ."

"Yes, sir, I can break that down for you. Our training emphasis is better placed. Our training techniques and training aids are better. Our men are better prepared mentally and physically to absorb the training. Our officers have fought in a wider variety of terrain. Our company commanders are more experienced. All around, we've got more of what it takes!"

Apparently, some of IT has rubbed off on the civilian community around Fort Benning. When the division's need for more training space was revealed recently, patriotic citizens volunteered 40,000 acres—*rent free!*

You have a warm feeling of pride in the United States Army as your plane leaves Fort Benning. Yet your satisfaction with what you have seen and heard is marred by a nagging thought in the back of your mind.

You wonder what is bothering you. Is it the one-man foxholes you saw—foxholes like those that proved so lethal and lost so many positions during enemy night attacks in Tunisia and at the Pusan Perimeter? No, you are confident that General Chase and his veteran battle group commanders will make sure that the 2d Division doesn't repeat the mistakes of World War II and Korea.

The men behind the man with the gun

Suddenly you recall a piece of time-worn equipment that you saw at Fort Benning and it gives you a clue. What is bothering you is really more of a question than a doubt.

The question concerns a life line that parallels the chain of command you've followed for four days. It is the military and civilian supply line for producing modern weapons and equipment.

You wonder if the same purposeful intensification of effort that you saw projected from Fort Monroe to Private Willie Waller's foxhole pervades the supply line from contract desk to factory shipping platform. Are people up and down the line expressing their sense of urgency in practical application? Are they delegating responsibility and doing things concurrently? Is their work going on around the clock?

Are they getting with IT, *too?*

• *Growing interest in the close air support problems of the Army and Air Force led* ARMY *to schedule this article on the subject because it believed that essential difficulties would never be resolved until hardened attitudes of both the Army and Air Force were put to searching examination and new doctrine was evolved based on what is required to get the close support mission job done. Between the time we accepted the article and scheduled its publication came the announcement of the new STRAC/TAC command—an obvious instrument for performing the very task of reconciling attitudes and preparing the needed doctrine.*

Close Air Support

How do we get it?

By Capt. ROBERT B. ASPREY

DURING Wintershield II, Seventh Army's 1961 winter maneuver in eastern Bavaria, a first sergeant who wore the badge of a paratrooper and who had fought in World War II and in Korea looked up at a single Air Force jet screaming across the leaden sky.

"Three days in the field," he said bitterly, "and that's the first air support I've seen. Same damned thing in Europe during the war, same thing in Korea except when we got a Marine strike."

Later in the day I mentioned this to an Army general who, like all persons I mention in this article, will remain anonymous. "Well, he's right," the general said. "Except from the Marines in Korea I've never received good close air support. I haven't had it on this maneuver, and I wouldn't have it if we went into combat tomorrow. It's a punch I need and it's a damned shame not to have it. The trouble is, my people know we don't have it, and that makes for a morale problem."

"The trouble is," a ranking Air Force officer explained to me, "the Army doesn't have a clue about the meaning of close air support. They're thinking in terms of zoomies coming down over their front lines to drop napalm and we're thinking in terms of a hundred or so miles away in order to let them get on with their job free from enemy air."

Wintershield II, the maneuver that gave rise to these and other conversations with Army and Air Force officers, tested all tactical capabilities including close air support of Seventh Army units by Seventeenth Tactical Air Force. During the five days of this maneuver NATO forces (Seventh Army and Allied units) requested over 80 missions. About 25 per cent of these aborted because of bad weather at departure airfields and about another 40 per cent aborted because of foul weather over target. Thus weather cancelled nearly two thirds of close air support operations.

USAF F-100 Super Sabres patrol the skies of Western Germany. Obvious inability of such fighter aircraft to perform all TAC missions effectively has resulted in the decision to develop a specialized close support aircraft

Similarly, during 1960, Seventh Army requested 1,400 close air support training missions down through battle group or armored infantry battalion. Eighty per cent, or 1,120 missions, were approved by Air Force. Forty per cent, or 600, were actually flown—less than half of the original requests.

Bad weather caused about 90 per cent of the aborts. The remaining 10 per cent were explained by a variety of reasons: radio failure at forward air controller (FAC); Army failure to shut off high-angle artillery fire in the strike area or on routes to and from; FAC unable to direct air on target due to improper identification of aircraft or target; aircraft failure to identify target. The 10 per cent figure is misleading in that it would have been undoubtedly higher had weather allowed more planes in the air.

The net result is catastrophic. One lieutenant colonel complained that in two and a half years in armored rifle battalions and combat commands, he had seen 12 practice strikes actually flown; several lieutenant platoon leaders commented that within their experience their battalions had never received a practice strike! No better a record can be expected for the 1961 goal, a modest 640 successful missions employing 32 FAC teams trained as organic to infantry and armor divisions. Since safety regulations require a 3,500-foot ceiling and three and a half miles of visibility for training missions, and since in this part of Germany these conditions do not exist for some 70 per cent of the year, it is tempting to use the weather to explain away the deficiency.

Unfortunately, the weather is only part of the difficulty. Close air support is a weapon, a very complicated weapon, whose effectiveness depends upon its prime mover, on the man asking for it, and on the man firing it. When the people involved may embrace separate doctrines of belief, and where in some instances these doctrines rest on certain misconceptions and lack of experience, an impasse is bound to develop.

Defining the term

The Army's official definition of close air support is stated in AR 320-5 *(Dictionary of United States Army Terms):* "The attack by aircraft of hostile ground or naval targets which are so close to friendly forces as to require detailed integration of each air mission with the fire and movement of these forces." This is similar to that subscribed to by the Air Force and offered in JCS Publication 1 *(Dictionary of United States Military Terms for Joint Usage):* "Air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces."

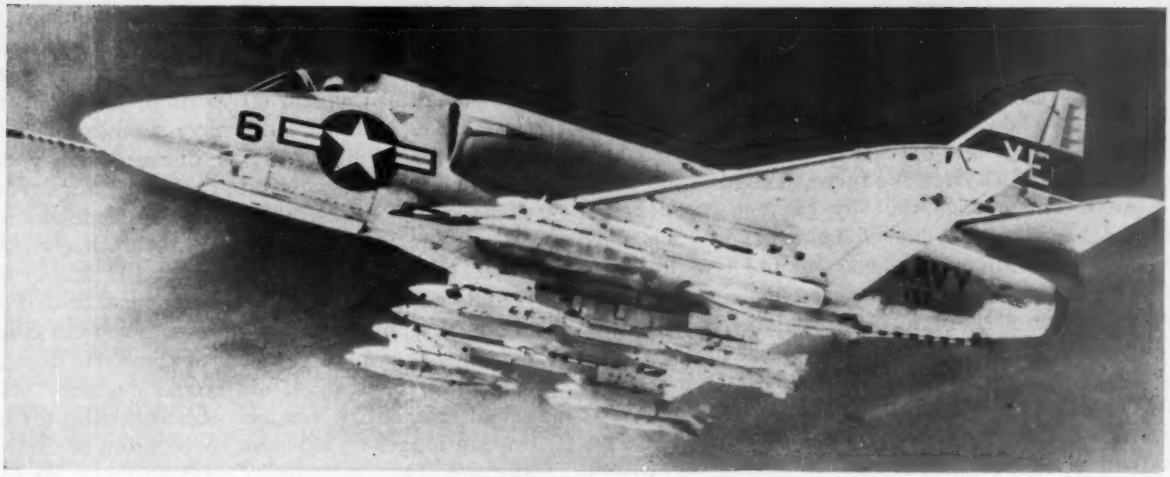
The Army extends the definitions with certain operational specifications. The effectiveness of close air support depends on its responsiveness to the needs of the ground commander: support must be on hand within at least one hour after the initial request although in special cases such as fleeting targets of opportunity faster responsiveness must be assured. The Army's ultimate desire for close air support is similar to that governing conventional artillery: where you want it, when you want it.

Under Army terms a ground commander may want close air support from 500 yards in front of his troops up to a distance which will immediately affect his local situation. While he prefers total destruction of the target, he will accept sufficient damage or disruption to enable ground units to take the heretofore unattainable objective.

When the ground commander wants close air support is, of course, determined by his tactical situation. In a conventional operation, he will want it when his posture momentarily precludes using heavy artillery—for example, in an amphibious or airborne assault or in a major river-crossing; he will want it when heavy artillery cannot do the job or when it is committed elsewhere; he will want it when he is firing every gun he has and still can't get the job done; he will want it at all times to perform tactical reconnaissance missions; and he will want it to support vertical assaults by helicopter. In a brush-fire war to which his units have been transported by air he will want it until heavy artillery arrives and the terrain permits its use. In a tactical nuclear war he will want it in all of these situations, but the nuclear battlefield is so envisaged that he will want it much more frequently and in greater strength because increased mobility and dispersion will have removed much of the supporting artillery firepower available to the small unit on the conventional battlefield.

How is tac air provided?

The task of supplying close air support to the Army belongs to the Air Force. Although the ground commander generates the request, the air commander passes on it or, in the final analysis, controls it. The air commander accomplishes this through a communications system that at an army headquarters operates in its air support operations center (ASOC) run jointly by Air Force-Army personnel as an adjunct to the army tactical operations center (ATOC). At a division headquarters the air commander is represented by an air liaison officer (ALO) who heads an air liaison section in the fire support coordinating center (FSCC) or sometimes in the division artillery's fire direction center (FDC). The ALO controls battle group and combat command for-



The Army's interim close-support aircraft may be a larger version of this Douglas A4D attack aircraft

ward air controllers, each of whom is an Air Force officer commanding a team of Army personnel working in Army vehicles and with Army communications, and the officer responsible for initiating the request for close air support.

This is the important point, for stated in another way, it means that from start to finish—from FAC lieutenant to tactical air force general—the degree of responsiveness of a weapon often vital to the ground tactical situation depends on Air Force personnel. They may or may not be qualified to judge the ground situation and, understandably enough, are prone to the particular attitudes inherent in their service environment.

The current Air Force environment severely inhibits its ability to supply close air support under the conditions desired by the Army ground commander. The first conflict emerges from a strategic consideration that gives the lion's share of the Air Force budget to Strategic Air Comamnd (SAC). Despite such military crises of the past decade as Korea, Malaya, Cyprus, Egypt, Algeria, Laos and now Berlin, the Air Force holds to its first budgetary priority of supporting a global nuclear warfare capability. While SAC's past and current capability can and should be defended—I think the Free World owes SAC enormous gratitude—the development of other massive retaliation systems such as the ICBM and Polaris plus the constant improvement in missile air-defense systems has made the fixed-wing enlargement of SAC definitely questionable.

TAC's attitude

The second conflict arises from the first, and is the attitude of Tactical Air Command towards close air support. Although differing in degree, statements made to me by responsible Air Force officers seem to have been motivated by General LeMay's prophecy to the effect that in the next war we won't even have time to issue ration cards. The implication is clearly that of an air-delivered thermonuclear war in which land-mass operations, even if we see them, will be of a secondary nature and will be supported by the lowest tactical air priority.

At present TAC formally embraces three missions: air defense of a theater by tactical aircraft; interdiction of enemy areas by tactical aircraft; close air support of ground units by tactical aircraft. The preference of mission or the tactical attitude is informally stated by TAC officers whose words range in degree rather than in concept.

An Air Force general told me that he is perfectly willing to increase close air support capability if the budget permitted. However, he pointed out that "any time we come up against the better Communist aircraft anywhere around the Iron Curtain we are going to need all the fast aircraft we have, and more, to keep from losing our entire air capability." Another Air Force officer stated bluntly: "The Air Force admits a tactical relationship and responsibility to the ground forces, but not over the front-line area. Our first tactical priority is air defense. If we don't knock the enemy out of the air before he strikes the ground battle there won't be a ground battle." Once enemy air is neutralized, "the Air Force can best serve the Army by hitting the enemy in the rear area—and I don't mean wasting B-29 strikes on single bridges as we did in Korea. Nor can a five-million-dollar aircraft be used to drop a 250-pound bomb—close air support is a maximum waste of firepower for the results gained."

This attitude, combined with budgetary considerations, is responsible for the Air Force principle of conservation of tactical aircraft. Under this concept a high-performance jet, the so-called "multipurpose" airplane such as the F-100 or the

newer F-105, is supposed to carry out each or all of these three missions.

Army critics point out that performance specifics of these tactical aircraft give close air support short shrift: the airfields demanded for their maintenance and operation must be located hundreds of miles from the forward edge of the battle area. This means that by the time an aircraft reaches the front line it has consumed too much fuel and cannot slow down enough to loiter on target; it cannot reduce speed sufficiently to gain maximum strike effect, particularly at 500 yards from friendly troops; its speed is too great to allow maximum visual reconnaissance in a tactical situation where the ground commander can't wait for photographs; and its performance is not compatible to the needs of helicopter assault support.

Here again Air Force statements vary in degree only. One officer was "inclined to agree" that the F-100 and the F-105 are not "ideal support weapons." But "in a situation where air combat is also possible they would be preferable to slower and more vulnerable aircraft." While not accepting the feasibility of a single-purpose close support airplane because of "combat conditions, density of [air-defense] fire and distance from available bases," this officer saw nothing wrong "with trying to develop a specialized close support aircraft for specialized situations. The whole question is one of proper application of limited resources and there is always something to be said for both sides." Another Air Force officer brushed aside Army objections to the current aircraft with "the F-100 is entirely suitable in every respect for close air support." Still another officer disclaimed Air Force responsibility for close air support: "The Army has to replace it with better artillery fire and with guided missiles."

Marine Corps practice

The dichotomy of thought between the Army and the Air Force on the subject of close air support is made the more interesting by the introduction of the Marine Corps capability in this tactic, by the attitude of NATO allies, by the enemy attitude, and by the U. S. Army's current attempts to produce its own support.

To anticipate the reaction of the unintegrated service reader to the introduction of the Marine Corps capability, I shall attempt to meet his objections in a moment. Here I wish to point out that the Army commander's qualified desires for close air support are not unreasonable when compared to those demanded and received by the Marine ground commander.

Accepting the formal definition of close air support as quoted earlier, the Marine ground commander can expect an airplane over target within 15 minutes—not one hour—after his initial request. Under suitable terrain conditions he does not hesitate to ask for a strike within 100 yards and sometimes within 50 yards of his front-line troops. He and his FAC have no hesitation in asking for a night strike; during neither day nor night do they hesitate in asking for strikes with napalm tanks, high-velocity armor-piercing rockets, antitank rockets, fragmentation bombs, general-purpose bombs in sizes of 100, 250 or 500 pounds with proximity, instantaneous, or delayed action fuze, or normal strafing action with 20mm cannon—or a mixture of all of these. He depends constantly on tactical air reconnaissance—often visual; his entire vertical assault helicopter operation hinges on effective cooperation of tactical aircraft. That he usually receives what he asks for is attested to by any Marine officer and by many Army officers who saw the performance during World War II and in Korea. One Army major general who fought in Korea publicly stated that "the tactical air support of ground troops in the Marine Corps is fantastic. It must be seen to be believed."

Evolution from tactical need

From the beginning, the Marine concept of close air support evolved from tactical need. Where Army air developed as a corollary of the Army's strategic mission, Marine air developed as a corollary of the Navy's strategic mission—and this has made all the difference. In the late thirties Army air increasingly embraced the role of what became known as "strategic bombing," with tactical aircraft operating primarily to protect the bombers. Simultaneously, Marine air was confined to a tactical role which stressed the immediate needs of the ground commander.

To a large extent the mission of land-mass warfare could utilize heavy artillery in place of close air support, and indeed was forced to do so because rear-area landing fields reduced the effective range of already short-range tactical aircraft until their time over target was practically nil. The amphibious warfare mission depended in its initial phase on naval gunfire which could not (and cannot) technically replace close air support. But here the Marine commander did not have to depend on it exclusively because to accomplish its strategic mission the Navy developed the aircraft carrier which put close air support almost on target. Further, carrier operations demanded a special tactical aircraft whose characteristics, as a sort of operational bonus, allowed it to operate from primitive forward airfields, thus to extend close air support inland beyond the range of naval gunfire and sometimes in terrain unsuitable for artillery support.

The current Marine Corps mission as defined by

law is to maintain a Fleet Marine Force in operational readiness for action anywhere in the world in reinforced battalion or regimental landing-team strength. In the posture compatible to the task force concept of amphibious operations, organic close air support is no more "sheer luxury" than two battalions of helicopters are to Seventh Army's mission, or self-propelled howitzers to corps artillery, or an around-the-clock strategic alert is to SAC. The task force concept—a phrase becoming increasingly familiar in Army tactics—dictates the current Marine ration of one air wing to one ground division.

If the Marine Corps were fighting land-mass warfare, obviously it would not require one air wing to one division, nor did it in Korea. That is why so many Army commanders were able to experience the Marine concept of close air support. The amphibious mission also dictates the concentration on, and thus the high quality of, close air support. Yet the Army's global mission of fighting land-mass warfare today, taken with the requirements of mobility and dispersion levied by nuclear warfare, dictate a need for close air support every bit as great as that of the Marine Corps. That is why so many Army commanders were impressed with the Marine concept in Korea and, by their own admission, came away with the realization of "having missed something all these years."

Tac air can't be turned on and off

This "something" must be briefly examined to dispel another misconception current in both Air Force and Army circles: that close air support can be turned on and off like a spigot. It cannot! An air strike delivered in close support of troops requires precise timing, absolute accuracy, and an intimate knowledge of the immediate objective. It is a very complicated concept that depends for success on control, attitude and equipment.

The Marine Corps believes that when his troops are ashore the ground commander must retain control of tactical air at all times. This belief is inculcated in the Marine officer, ground and air, and for a good many years now every attempt has been made and is being made to further this professional integration.

Close air support training with units ranging not from battle groups or armored infantry battalions but from fire teams to regiments is made a maximum, continuing effort throughout the year. The aircraft flown for close air support is the A4D, a small, single-engine jet that is designed in several configurations with this one task very much in evidence. Currently, 12 squadrons of VMA (Marine attack aircraft), with 20 aircraft per squadron, are maintained *with a primary mission of close support;* 15 squadrons of VMF (fighter) are maintained with a back-up capability of air-to-ground operations. In the near future, today's capability will be enlarged by the A2F, a two-place, all-weather, supersonic fighter with specific close air support characteristics.

Fortunately, neither the requirement for good close air support nor the effort demanded to achieve it has escaped the notice of some U. S. Army planners as well as some of our NATO allies. French, Italian and German officers make no secret of their dissatisfaction with the current U. S. Army-Air Force doctrine. Italy has gone so far as to design and produce a single-engine jet, the Fiat G-91, at a cost of $300,000 per plane, designed solely to provide close air support. The Russians are said to have made close air support organic to the ground division—a significant move if true, in view of their large and powerful air fleet. In obtaining the Mohawk airplane the U. S. Army already has faced its deficiency in tactical reconnaissance; by pursuing the sky cavalry concept it is facing up to a tactical air deficiency by asking the chopper to do the work of tactical aircraft.

For the Army to fly its own specialized close air support aircraft is no more a "tactical intrusion" into the Air Force sphere than its current armed helicopter and tactical reconnaissance operations. Although Major General Clifton F. Von Kann, Director of Army aviation, repeatedly has stated that he does not want to get into close air support operations, he also has stated that "the whole aviation program is in a state of transition [which] means constant change."

In fact, it means constant *challenge,* and the Army is faced with exactly that in the field of close air support. The chief problem is doctrinal. The Air Force trains pilots who are among the best in the world. Equipment deficiency, budget or no, can always be overcome providing everyone concerned wants it overcome. Attitude is something else, and this is where the air must be cleared. If the Air Force wishes to keep the responsibility of providing close air support, then it must be willing to reorganize its tactical air forces into something capable of offering a performance known to exist and, just as important, its people must come to believe in this performance. If because of attitude and budget the Air Force cannot change its ways, then the Army must stake a claim to creating its own capability.

To the soldier on the ground it doesn't matter a damn who supplies close air support, so long as it is the best. For too long the Army infantryman has not received the best. In World War II and in Korea he suffered along without it and got by. If there is another war he may not get by—and that is what worries him today.

AMBUSH

THE COMMANDER'S ATTRITION PUNCH

By Lt. DAVID J. W. WIDDER

Whether it's limited flank or area ambush, simple, well-rehearshed plans are essential

For the group of Malayan Communist terrorists, those 48 hours of patient waiting in chilling rain were well worth while. Dead amid the tangled wreckage of a burning armored car lay Sir Henry Gurney, High Commissioner of the Federation of Malaya—victim of an ambush. By carefully selecting concealed firing positions high above the winding road, by thorough intelligence and by total surprise, the Communist terrorists had succeeded in destroying their chief adversary. The murder of Sir Henry in October 1951 provides another instance of surprise attack.

Through the use of ambush, a commander can deal a telling blow against his adversary. By destroying the enemy's supply columns and unprotected troop movements, he will keep the enemy off balance and gain a big psychological advantage.

The two basic types employed in modern warfare are the limited flank and the area ambushes. The former is the basis of U. S. Army doctrine, while the latter was employed with excellent results in Malaya by the military forces of the British Commonwealth. Naturally, the enemy sit-

BLACK STAR PHOTO

Lack of plan? Vietnamese soldiers, surprised by Viet Cong attackers, race to man positions.

uation and the terrain are factors which determine which type of ambush will be used.

LIMITED FLANK AMBUSH

The limited flank ambush employs two principal elements: a security force and an assault force. The security force has the important function of sealing off the objective area against reinforcement by the enemy from flanks or rear, and of supporting the withdrawal of our assault force. Normally, the security force does not participate in the initial attack. The assault force destroys or captures the enemy. By allowing the leading element of the enemy force to proceed past our prepared positions, the ambush commander triggers action upon his prey when the hostile advance guard reaches a designated point. In such a situation, the enemy has chosen the route while our ambush leader has chosen the exact time for the attack.

In organizing his position, the ambush commander takes full advantage of his weapons, the skills of his men, and the terrain over which he fights. Automatic weapons are placed in positions that afford good grazing fire into the killing zone. Submachine guns and hand grenades may be employed from a position that is within point-blank range of the killing sector. Selected men operate an early warning system that notifies the ambush commander of the enemy's approach.

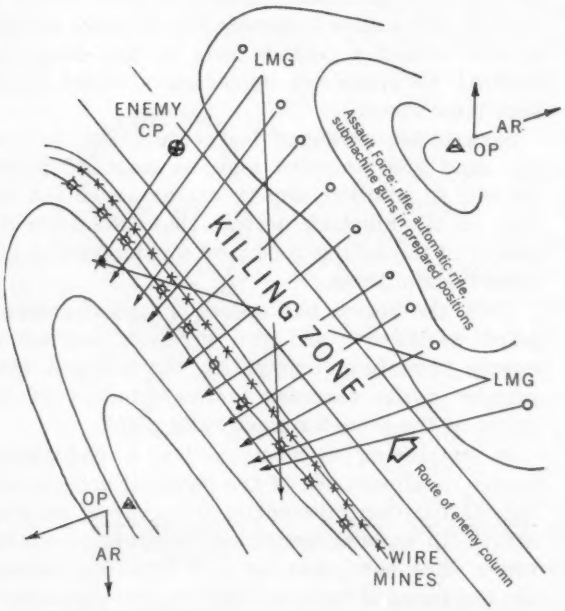
After selecting his boldest and most skilled men for his mission, the ambush leader thoroughly reconnoiters known avenues of enemy approach. He attempts to find an area which the enemy must follow and which restricts outside reinforcement and affords maximum advantage to the ambusher: a curve in a road, a deep valley, or a very steep cliff along a route of advance. Where possible, his own position affords some natural obstacle to the flank: a river, a cliff, or heavy underbrush—anything that will impede the enemy's escape from the trap, once it has been sprung. If the area has no natural obstacles to the flank of the access route, the leader may create them in the killing zone by carefully camouflaging barbed wire, mines, or trip flares along the flank. Units fighting in tropical areas have employed large pits, at the bottoms of which upright sharpened bamboo stakes are emplaced.

Having carefully chosen his ambush area—on the assumption that the enemy will employ that route in his advance, and having selected the critical sector of terrain which offers a restricted flank—the leader places his security elements in positions from which they can warn him of enemy approach. Security teams are located well forward of the actual ambush site, along other avenues of approach into the area, and on other critical terrain features. These teams observe the enemy and warn the ambush commander by wire,

radio, or—if he can be seen—by arm-and-hand signals.

The assault elements are then placed in good firing positions parallel to the enemy's route of advance. Proper placement of these men demands painstaking attention to detail while moving to assault positions. British Commonwealth troops found this so necessary to success in ambush operations that often men removed their boots and entered their positions from the rear—making sure that no footprints were left and that no vegetation was disturbed during the process. Initially, the ambush commander may place elements at both flanks of the killing zones, with the mission of halting the lead element and blocking the rear of the enemy column. Thus, by destroying vehicles in the lead and rear of a motorized column, enemy escape is prevented both forward and rearward, due to destroyed vehicles blocking withdrawal routes.

These flank elements use rocket launchers, machine guns, and obstacles such as fallen trees, landslides, prepared demolitions, or mines. Against personnel, machine guns and the new Claymore prove effective in eliminating lead and rear elements. Flank units may be controlled by radio, or more reliably by wire communications. The rest of the assault force—riflemen, grenadiers and submachine-gunners—is placed between the flank elements. The ambush leader selects a position from which he can best control the springing of the action and the withdrawal of his forces.



Restricted flank may include camouflaged barbed wire, trip-wired M-60 mines with trip flares and sharpened bamboo stakes. Ambush normally takes place in defile against cliff, in heavy underbrush or along curve of road.

Schematic drawing of Limited Frank Ambush

Upon being warned that an enemy column is approaching the killing zone, the ambush commander decides whether or not to waylay. He must consider his mission, the size and composition of the enemy force, and the ability of his troops to annihilate the entire hostile force quickly.

Upon deciding to destroy the enemy column, he alerts all elements of his command. Flank units are told the size and composition of the enemy column which has been selected for attack. To achieve total destruction, the ambush leader must be certain that the bulk of the enemy force is within the flanks of his designated killing zone. He alone decides when to open fire. The opening of fire on the column's lead and rear elements by the flank forces signals the concentration of all fires into the killing zone. Shock is achieved by the aimed, point-blank bursts of automatic weapons, aided by fougasses, Claymores, and grenades.

Any enemy not killed during the initial action may attempt to escape by running from the fire. These can be destroyed by mines, barbed wire, booby traps or small arms. At the signal from the ambush leader, assault elements move out from camouflaged positions to destroy any resisting enemy, and to quickly search the dead, seize prisoners, and destroy vehicles. When movement of the assault element to a predetermined rally point is complete, the security element displaces to this point to reorganize for further action.

AREA AMBUSH

In the area ambush, as in the limited flank ambush, the enemy situation and the terrain dictate employment. Forces of the British Commonwealth used this type of ambush with excellent results against Communist terrorists in Malaya. It has as its objective a water source, a food collecting point, an arms cache, or the junction of several trails. Unlike a disposition against a single avenue of approach, in area ambush the attack is by several groups in positions around the objective. These positions are astride approach and escape routes. When an enemy column nears the killing zone, it is allowed to pass unhindered into the center of the objective. There it is destroyed. As hostile elements attempt to flee the killing zone, well-placed ambushers eliminate them. All approaches to the killing zone are covered.

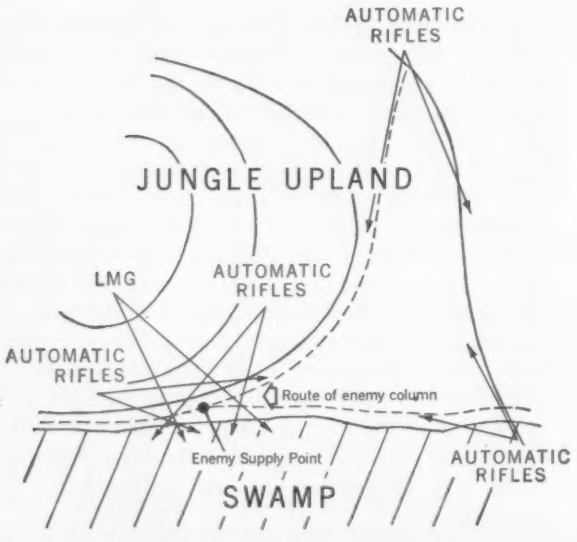
In planning the destruction of the enemy in

any sector, efficient aerial, motorized, or foot reconnaissance must uncover his camps, the trail junctions he frequently uses, and his supply points. First, the ambush leader selects the killing zone and the general location of each of his ambush groups after studying maps, aerial photos and intelligence data, and by relying on his own knowledge of the area. This is when he determines the principal direction of fire in order to employ attached weapons with maximum effect and to insure the safety of his troops. Next, he plans a release point from which separate groups move along carefully selected routes to their planned positions.

Throughout his planning, the ambush commander bears in mind two principles: first, all possible approaches and escape routes in the area must be covered to insure total destruction; second, his dispositions must have depth. He must remember that when fighting natives of a jungle area, the likelihood is very great that the enemy will scatter at the first burst of fire and melt into the vegetation. Since there is little chance of getting a second burst at them from his same positions, he must be sure his ambush groups are so placed that, in his attempt to flee the killing zone, the enemy will encounter one after another of several groups.

Employing the principles of surprise and economy of force, the ambush leader divides his troops into groups the sizes of which vary from a buddy team to a fire team. Patience and discipline are important factors in this operation; an ambush of this type requires a considerable period between planning and execution, not to mention the dispersion of the small groups.

Beginning with the preparation phase, camouflage and concealment are highly important. Once in position, movement is restricted and silence enforced. In Malaya, the British were careful to avoid detection through such meticulous measures as prohibiting the carrying of cigarettes and chewing gum, and the use of soaps and hair dressings. Firing positions must be entered from the rear, making sure that all traces of friendly activity in the area are obliterated or concealed. In addition to strict camouflage discipline, the separate group commander gets the utmost use of all his weapons by siting them where they can inflict maximum destruction on the enemy. He devises a simple and clear method of alerting his group once the enemy is near. The group commander prepares an all-around defense of his position and selects a location from which he can best control the actions of his troops.



Schematic drawing of Area Ambush

The ambush commander supervises the action by stationing himself where he may effectively influence its execution through radio, wire, or visual means of communication.

Considerable time is spent between planning the action and executing it. Once the group is in position, there must be no sound or movement. While waiting in ambush, weapons must be cocked.

The ambush should be sprung when the greatest number of enemy are within the killing zone and firing ranges have been reduced to the minimum—several feet, if possible. A simple drill for opening fire must be understood by all men: first, fire must be withheld so long as the enemy is moving into a more favorable killing area; second, at the instant a soldier feels he has been discovered, he opens fire immediately; third, every shot must count.

Signals are arranged for cease firing, so that the dead and wounded may be searched immediately. In addition, signals are arranged for setting off illuminating devices that silhouette the enemy in the killing zone, and for detonating emplaced demolitions.

Once the action has ended, the hostile supply point destroyed, and the greatest number of enemy have been eliminated, the ambush commander again assumes tactical control of his group at the predetermined rally point.

In employing ambush tactics, a commander makes maximum use of the physical and psychological attrition inherent in this type of surprise attack. In ambush activities, accurate reconnaissance, thorough planning, and timely rehearsals are the bases of success. Such careful preparation results in an attack which assures complete surprise and shock action, and allows the leader to keep his opponent continually off balance. When employed in conjunction with normal attack plans, ambush destroys the enemy's will to resist and thus becomes a Sunday punch to the commander who seeks to employ it.

Sketches for 3 Portraits

★ ★ ★ ★ By Brig. Gen. J. V. ANDERSON

My last few years of active duty were served, in both staff and command, directly under a succession of three lieutenant generals each of whom later reached four-star rank. Each was an able and dedicated officer of great ability, but there could scarcely have been greater contrasts in temperament, personality, and method. Their ages were within a year or so of one another. Their viewpoints and attitudes often were as dissimilar as if they were of different generations or different species. The ends they obtained were not uniform, but *they* were uniformly outstanding. The means they employed were strikingly and startlingly different. Whether all three would have been equally successful and would have reached comparably high positions in fields other than the military is an elusive and tantalizing question.

To have served under any one of them would have been an enlightening experience. To have served under all three in succession was a revelation in the complexities and mutations of ability and personality in similarly trained officers with generally comparable backgrounds and experience.

Intellectual stimulation was never lacking for an officer serving under them, even though you departed the service of one with that feeling best expressed in a paraphrase of the words of the nineteenth century British explorer on leaving the rude and barbaric realm of a semi-civilized Turkestan potentate: it was almost worth having known him in order to experience at last the ineffable delight of parting finally from his company. Yet unquestionably you were richer for an experience that had been outlived.

Through daily and sometimes hourly contacts over a period of several years each of these three generals revealed himself as a consistent, integrated, and commanding personality, both in large affairs and in the smaller matters of the day-to-day routine—the tussle, hustle and bustle of running the various large senior headquarters and staff agencies in which we served. Whether dealing with affairs on a national and international scale or with lesser matters, each had his own style, his own individual attitude, approach, and method.

GENERAL ATCHESON is the name I've given to the first of these three officers. Of the three, he alone had warmth and personal magnetism to a marked degree. These flowed around, influenced, and in turn were influenced by, his great military skill and professional ability, high intellectual attainments, and down-to-earth common sense, all employed with versatility, flexibility, force, and decisiveness.

Old for his West Point class, in which he had stood high, Atcheson had early been marked as a coming man. Big physically, he had a robust physique, an iron constitution, an enormous vitality that gave him unlimited capacity for hard and tireless work. I was ten years younger, and in top physical condition. Working under Atcheson at a corps headquarters in Korea during combat, or organizing the post-armistice main battle position or conducting intensive post-combat training (which was more demanding on senior officers than combat), often I got tired and showed it, I'm sure. If he ever got tired he never showed it. His mere physical presence with a front-line infantry unit had a magical effect. Simply by being there he was able to transmit to the unit and to the individual soldier some of his strength and his endurance—his personal warmth, his professional skill, his detailed knowledge of the situation, and his cool confidence that nothing could go wrong because all had been, if not foreseen in detail, at least counted as a contingency which flexible planning and skillful operations would control.

Before entering West Point Atcheson had served briefly as an enlisted man, and throughout his long and varied service he had closely observed and studied American soldiers. He understood them. Without any condescension or loss of place, he could get to them. He had an equally happy touch with junior officers. They never seemed awed by his presence, his stars, or his great reputation. They felt comfortable and enthusiastic and free. They were eager to get his views, to understand what he wished them to understand, to do what he wished them to do, not just because he was the corps commander, but because he reached them personally and touched their minds and hearts.

In his own headquarters, not content with his many normal and routine contacts with individual enlisted men and junior officers, Atcheson maintained close knowledge of their physical condition and morale by the skillful use of his officer and enlisted aides, but not through any Big Brother or paternalistic attitude. He required his aides, for example, to eat in the headquarters junior officers' mess, rather than with him in the commanding general's mess, so that they could reflect for him, in the natural course of day-to-day happenings, the conditions and viewpoints of the junior officers. He had always had an enlisted aide or two who mixed normally and naturally with the other soldiers and casually and unconsciously reflected for him the pulse and feeling of the enlisted men of the headquarters.

Atcheson rewarded good performance by praise in public, but he criticized in private. Both actions were thoughtful, courteous, just, and due—and he could be very tough if the circumstances required toughness. He was a master in the use of General Bruce C. Clarke's concept that each person should be imbued with the feeling that he was "doing something important, doing it well, and getting recognition for it." He could insure a factual basis for this feeling throughout every unit he touched.

In training, Atcheson was superb. Without losing sight of specific and paramount objectives, he could gather together all the diverse strands upon which a combat unit depends for its life and success in battle—the threads of morale and esprit, personnel and administration, intelligence, supply and logistics, operations and technique—and weave them into a finished fighting whole, a first-class combat outfit. He was the exponent of fully rounded training. Atcheson was the outspoken and avowed enemy of excessive concentration on any single aspect of training.

"To the extent that you blindly concentrate on any one training objective to the exclusion of all others," he would say, "you will have an unbalanced and lopsided unit. Concentrate if you feel you need to, briefly, on one major phase of the whole training objective, but do not entirely exclude the other elements of balanced training. You do so at your peril. Your men and your units need to excel in many activities and to excel in carrying on all of them at the same time. This is an essential part of the training task."

In the Army this was a period of intensive drives to eliminate waste and to foster supply economy and cost consciousness. Atcheson dutifully—and energetically and forcefully—implemented these essentially housekeeping programs, but his heart was really in improving training management. He considered wasteful training management the most fruitful area of opportunity for military "savings."

"God help the Army's reputation," he once said, "if they should ever cost-account some of our training management. Ineffective training, slovenly training methods—there's where we'd really lose our shirt, in terms of costly and uneconomical activities. There's nothing more costly than time. It's one of the few things you can't buy. A training hour wasted or ineffectively used is gone forever. Don't let your training hours be wasted."

And he saw to it that no training hour he could control was wasted. Unquestionably, in the Army of his era he was the ablest and most effective planner, organizer, and supervisor of individual and small- and large-unit training.

Atcheson's mind was fertile with new organizational concepts and new operational ideas for combat; with new structures and methods for infantry and armored divisions in atomic and nuclear-free warfare; with new procedures and techniques for the headquarters and staffs of the division, corps, army, and higher units. He was the least doctrinaire of men. To every problem he applied what President Kennedy has termed the rule of reason. He had little sympathy for blind following of the book solution or any other stereotyped answer.

To lesser minds his disregard of the conventional was sometimes unsettling. He recognized this, and he had learned early how to move officers from the known and the usual to the unknown and the unusual, by such adroit and careful steps that the unusual was felt to be a natural and logical extension of the usual.

He had little inherent patience, particularly with slowness and stupidity, but he had taught himself to exercise patience in training and in introducing his new concepts.

As a U. S. corps commander in charge of a large group of ROK divisions and several ROK corps, he was remarkably successful in training and handling Korean senior officers and in solving the delicate command problems involving their units. He was even successful in imbuing the Koreans with some of his own flexibility and noncomformity, characteristics with which most of them were not plentifully endowed. Korean leaders and units tended to reach their greatest competency during stereotyped situations. They would become technically quite proficient under static conditions where operations could be performed largely by rote. But during moving and fluid situations many ROK units and leaders were not so successful. New organizational and operational concepts unsettled them. Atcheson succeeded, to a marked degree, in breaking their bondage to the static, the stereotyped, and the routine.

He was a steady, tireless and eager worker. Always on the job himself, he expected the same from others—if there was work to be done. There was nothing frantic or high pressure about his continuous attention to duty, either for himself or for others. It was simply that he always saw so much that needed doing, so many interesting things to be accomplished, and his fruitful mind observed so many challenges and produced such a variety of responses, that the day never seemed long enough.

In Korea after the cease-fire, boredom and waiting for the time to pass became major problems for many, particularly for those who lacked some spark of Atcheson's inner drive and resourcefulness. His spoken and unspoken example and remedy for this danger was to set goals, objectives, and time limits.

"My father used to say," he remarked, "that if you want the next two months to pass quickly, go to the bank and borrow a thousand dollars on a sixty-day note. So set yourself up a series of worthwhile objectives and put time limits on them. You'll get things done and you'll be surprised how fast the time goes, and how constructively and profitably."

Then he added, with a grin, "If you are lacking in ideas or find insufficient guidance for objectives and goals in the corps training and administrative directives, I can supply you, on request, with some specific ones suited to you and your unit's needs."

He flashed a broad smile, and so did his listeners. No one lacked for guidance, goals, or objectives. The corps directives, always personally approved and often originated and written by the corps commander himself, were models of pointed clarity and emphasis for generating constructive activity.

Atcheson's broad expertise in the techniques of command, and his directness and simplicity—highly polished and developed though these were—stemmed largely, perhaps, from the fact that during his service as a general officer he had had an almost unbroken series of command assignments.

He had successfully avoided high-command staff duty, and had never served in or near the Pentagon except for a few months immediately after World War II. Although he was a skilled and accomplished staff officer, he wanted to avoid staff duty in general and Pentagon serv-

ice in particular. Surely he recognized that there were grave hazards to his career in this attitude, but he had weighed the risks, decided, and became adamant. At about this time one of the perennial reorganizations of the Department of the Army staff was going on. New and increased stature and powers were being given to one of the assistant chiefs of staff, along lines for which Atcheson was highly qualified. One evening some of us—half-jokingly, half-seriously—suggested that this slot might be his next job after Korea.

"I'd turn in my suit first," he said quite simply but emphatically, "before I'd accept that or any other Pentagon assignment." (He could retire at any time he chose.)

It wasn't that he was not ambitious. He was. But his love for command and his natural affinity for it were overriding. His ambition seemed to have naturally channeled itself into an intense desire for, and attainment of, self-development—to be ready for any assignment or task, except in the Pentagon, that might come to him. This thoroughness and his desire to perfect himself were typified by a characteristic action during his days at West Point. Since his pre-cadet schooling had not included chemistry, he spent part of his summer furlough on a course in elementary chemistry so as to better prepare himself for the course at the Military Academy the next year.

The cynical will say, in cadet slang, "What a file boner! What a grind!" There was never anything of this attitude in Atcheson. The young Atcheson was simply taking a natural and logical step—if an extraordinary one for a young man—to breach a gap in his secondary school education so that he would be able to get more out of the academic course at the Military Academy.

Over the years he had been intimately involved with the Army's educational and school system. He had placed his indelible stamp on his own branch school as its commandant, and on the Army's entire school system as G3, Operations and Training, of the senior headquarters responsible for the system. But for all his ability as an educator and a trainer, his intellectual attainments, and his ceaseless application, he was not essentially a desk man and certainly had in him nothing of the cloistered scholar. He loved the outdoors—shooting, fishing, hiking—and quoted an old saying, "Every day spent hunting or fishing means that a man lives one day longer." He got outside for a day of sport in the open whenever opportunity offered. He returned ruddy and refreshed.

In his relationships with officers working under him, Atcheson adopted a pragmatic viewpoint. He recognized that high quality was desirable, but that it was not always obtainable. He was philosophical about this, having long ago accepted the wisdom of General George C. Marshall's statement, "We use them in their strengths and in their weaknesses." Acknowledging that this was necessary, with the strength of the armed services then at more than three million, Atcheson characteristically refused to fight the problem. He made the best possible use of the officers available to him, regardless of the varying quality of the material.

In judging a man's performance, his most demanding criterion followed logically from his acceptance of the necessity of using variable abilities. In rating an officer's performance, his first question was, "Does he get things done?" His second query, equally important, was, "Is he helpful?"

For all his high standards of performance, Atcheson could tolerate mediocrity—inherent, incurable mediocrity—if the man had gotten something done and had tried to be helpful. What he could not and did not tolerate was failure to try to get something done to the limit of one's ability, and not trying to be helpful. In his makeup the only trace of anything approaching vindictiveness was an unimpassioned but implacable judgment on those he found not to be trying and not even trying to be helpful. He was merciless in handling such officers.

While Atcheson could understand, bear with, and use mediocre officers, spurring them on to efforts and results ordinarily quite beyond their capacities, he was equally implacable against any hint of obstructionism, of negativity. When he quietly said, "I'll put a stop to *that* foolishness," you knew he was on the warpath against some obstructionist. Himself a can-do man, he would not countenance any no-can-do people around him.

In running his corps headquarters, in receiving the streams of distinguished visitors, and in conducting conferences for his own staff and his subordinate commanders, Atcheson was a master showman. Yet his presentations and briefings were so easy and apparently so effortless you didn't perceive the stage management that went into them, or even that they were shows, so carefully underplayed were his effects.

He was completely unpompous, dignified without being stiff, easy without being familiar. A complex personality, intensely ambitious and fully conscious of his great worth, but so unostentatious that the over-all impression was one of great simplicity: outgoing, friendly, considerate, yet immensely capable and plainly destined for the highest rank and position. A potential Chief of Staff of the Army if the cards favored him, if his lack of Washington duty was not an insuperable bar, and if retirement for age did not loom on the horizon inopportunely before he came within striking distance of the position.

GENERAL SHOPE (the name I've given to the second member of my trio) was a complex man and, unlike Atcheson, gave no appearance of simplicity. Shope's usual manner was abrupt, offhand, penetrating, searching, intellectual, and impatient. He was dissatisfied with anything less than the best, and since excellence is a rather rare commodity he was habitually dissatisfied and he bluntly expressed his dissatisfaction in harsh, crusty, and acid terms. Just beneath this rough surface was an intensely shy and sensitive man. This was often startling to many who thought they knew him well, had served long under him, and had felt the force—the lash, even—of his powerful personality, of his toughness, and of his likes and dislikes, which were many and strong.

Of rather small stature, General Shope had a well-developed and rather studiously unconcealed runt-complex. But he too was the least pompous of men. He appeared genuinely to loathe any of the small prerequisites that attend rank and position, or even any normal minor courtesies, which tended to focus attention on himself. I have seen him become almost savage toward an unwary and unwarned officer who moved to offer him a light for his cigarette. If hasty in such instinctive reactions, he was equally quick to unspoken apology; a hand lightly and surprisingly placed on the rebuffed officer's arm at the conconclusion of the meeting. But he loathed being the center of any attention.

Although shyness and sensitivity governed and explained many of Shope's attitudes and actions, they were not obvious and readily identifiable characteristics. Outwardly, he was impressive in presence, dynamic in leadership, and extremely energetic and forceful. He had an awesome reputation. He was widely known and feared as a demanding taskmaster and a hard and merciless driver who was extremely difficult to work for. Actually, except for the small areas in which his shyness had you walking continually on eggs, he was not difficult to work for, so long as you gave him what he demanded, which was perfection—and your life's blood in terms of effort.

At West Point Shope had stood very near the top of his short-term World War I class, and had been commissioned before he was nineteen. Like Atcheson, throughout his service he had been outstanding among his contemporaries and against some very tough and able competition. He had the finest intellect and the quickest mind I have ever encountered, and the least patience. Usually he was several jumps ahead of his superiors, his own staff, and his subordinate commanders. He did not suffer fools gladly. Someone might have to work with and bear with the slower and the less acute, but not Shope. His judgments on them were quick and accurate, and his actions were immediate and forceful.

He believed in placing blame where blame was due and in effecting prompt corrective action, which he did fluently and frequently, but he did not believe much in praise. "OK," or "That's fine," or the precisely inscribed "Thanx," were his highest forms of informal appreciation or commendation. Again, his shyness, I believe. He had, through necessity, developed facility in pointing out weaknesses and in castigating and correcting errors, even though these involved a certain amount of unavoidable focus on himself. But he could avoid any focus on himself brought about by offering words of praise or encouragement. And he did.

His mind was so quick and his powers of intellect and reasoning so broad and so acute—and his patience so short—that a briefing being held for him would glitter with a galaxy of potential dangers. The greatest was that the briefer's laxity or stupidity or nervousness would confuse and exasperate General Shope, for whom clarity was the be-all and end-all, that he would become enraged—ostensibly with the briefer, who would be made to suffer painfully, you may be sure—but actually with himself for what he must have subconsciously considered his own failure to comprehend. On one occasion his staff feared he would have a stroke because the young lieutenant colonel giving the briefing repeatedly referred to a key symbol on the map by a term which clearly meant one thing to him and quite another to General Shope.

To General Shope, an unprecise or unclear written or oral statement was an offense against Nature and Nature's God. He handled the English language with the skill and precision of a great surgeon wielding his scalpel, and he expected something of the same skill and precision in those

who worked for him. To serve directly under him, even briefly, was the equivalent of a course in clean-limbed, precise, and economical writing and speech—complete with a mimeographed pamphlet on common offenses against decent prose which automatically greeted each newcomer to his staff.

Shope's mind, like Atcheson's, was fertile with new ideas, and he abhorred the conventional and the stereotyped. Unlike Atcheson, however, he was a disciple of the principle of intense concentration on a single problem or facet of a problem, even to the exclusion (temporary, it's true) of other contributing elements, until the object of the concentration had been achieved. He lacked Atcheson's remarkable flair for juggling all aspects of a situation at the same time and bringing all to a synchronized and uniformly high state of excellence. His salient faculty was his ability to focus, with great speed, precision, and intensity, on what he considered *the* essential and to master that in short order.

Unlike Atcheson, Shope was extremely conscious of the limits of his authority. Atcheson never hesitated to assume whatever authority he felt was needed, or even at times to pass the bounds of his duty-constituted responsibilities if he felt such bounds to be essentially procedural rather than substantive. Shope, however, was meticulous in keeping himself within stated limits and was acutely sensitive to any subordinate's even seeming to attempt to persuade him to pass beyond them. Here again his passion for precision and clarity controlled. He allowed his staff and subordinate commanders great leeway within duty-constituted bounds, but woe betide anyone who exceeded them. Among the most chilling words he could utter were, "By what authority did you take this action?" As he awaited the reply, his mouth would compress into a downward crescent, bleak and sharp, his lips so thin they almost disappeared. He felt clearly and coldly that the bounds of your or his authority had been exceeded, so your answer had better be an extraordinarily good one, and fully substantiated.

When time brooked no delays, Shope habitually acted with speed and decisiveness, but he had a keen sense of timing and feasibility in terms of policy and procedure. He was a master at the use of delay to successfully resolve difficult or complex or controversial situations. I have seen him delay for months an eventual and necessary but prickly action until the ground could be adequately prepared, the soil worked, the seed planted and allowed to germinate. Then the sun and rain, even the storm, of action were burst forth to produce the desired result. Atcheson was considerably less circumspect and elaborate, perhaps because he did not need to be. In his eyes, the required action usually was so demonstrably essential and his powers of personality and persuasion so great, that he rarely hesitated to move ahead boldly, confident that his concept would sweep all before it, which it almost always did.

While both Atcheson and Shope were high-pressure men, Atcheson was a *relaxed* high-pressure man, to use a somewhat anomalous term which nevertheless fitted his mode of operation. Shope, in contrast, was a high-tension, high-pressure man; he preached and practiced continuous, constant, high-velocity, high-pressure actions for himself and his staff. "The general staff is no good unless it is overworked," he said. Yet he was perceptive enough to recognize regretfully, if abstractly, that a price had to be paid for the pressures and tensions he created in himself and in others—the loss of time and leisure for ruminative thought, for what Winston Churchill has called lofty brooding. After he had departed from a tour of duty in a position of almost supreme importance in the Pentagon, where he and his chief had been under constant and enormous pressures, some of them no doubt unavoidable, some undoubtedly self-created, he once asked reflectively:

"Were we right? Were we following the proper course? Was it the best thing; was it worth it? Not for ourselves, I mean, but for the Army? Dick [his chief] and I drove ourselves mercilessly. Dick was worse than I was." (He smiled briefly. He must have known that none of his listeners, all members of his staff, would ever believe this.)

"He drove himself with big problems," Shope continued, "and with little details from six or seven in the morning to eleven or twelve at night. When did he have time to think? When did any of us have time to think?

"Dick and I never seemed to have time, or to be able to take time, for relaxed contemplation. Maybe we didn't need to. Maybe we did. I don't know."

Shope's staff was once very much entertained, in a rueful sort of way, when a visiting British general said that neither he nor anyone else on Churchill's military staff during World War II had ever been able to escape from a conference without leaving at least one of the Prime Minister's questions unanswered; without having been unsuccessful in providing the PM with every last little piece of precise information he desired.

"We always prepared ourselves in the greatest detail for a session with Churchill," said the Britisher. "We sought out the most remote and esoteric sidelines of our topics and researched them in the most minute detail. We exchanged notes and chits daily, almost hourly, on the nature of the PM's queries that day. Then each of us went in to him, hopefully. But not one of us ever suc-

ceeded in making a perfect score with the old gentleman." He concluded his story with a little smile.

General Shope smiled pleasantly in return, and the talk went on to other matters, but Shope's staff had followed the reminiscence with more than casual interest, and their laughter at its conclusion was somewhat out of proportion to its intrinsic humorous merits. If General Shope recognized the specific parallel, he never so much as batted an eye in indication. But he must have known that his ability to ask the searching and penetrating and unanticipated question was the equal of the Prime Minister's.

Like Churchill, Shope was a great administrator, both in depth and in detail. Endless small chits, on 5x8 bond paper, in his elegant, precise, and bold handwriting, flowed from his desk and out of his office to members of the staff. Some junior officer had long ago nicknamed them Shopergrams and the name stuck, just as General Alfred M. Gruenther had his Gruenthergrams and General Williston B. Palmer had his Palmergrams. Who originated the "gram" system is not known. Unlike Atcheson, who genially, and falsely, boasted that he had stolen all of his best ideas and procedures from other officers, Shope never commented on the origins of his ideas. But he took a modest pride in the Shopergram system, and even came to use the nickname himself, half-gleefully and half-deprecatingly. Yet there was nothing either gleeful or deprecating about Shopergrams. He composed them with great pains and precision, and they were models of compression, penetrating and all-inclusive clarity. The recipient might have a hard time and undergo considerable mental anguish in answering them, but he was never in the slightest doubt as to what General Shope wanted to know.

No crevice, no nook or cranny was too obscure, too seemingly unimportant, or too sanctified by the habits of custom and usage to escape the penetrating pen-light beam of the Shopergram. Searching always for the inefficient, the unproductive, and the wasteful—and for the stupidly routine, the perfunctory, and the imposingly useless—General Shope probed relentlessly into every aspect of each great establishment and command he headed. Even the most seemingly innocuous chit bore within it the seeds of large reforms, far-reaching reorganizations, and drastic revisions of practices and procedures.

Shope was the most skillfull and gifted administrator I've ever encountered. Both in detail and in the larger sense of administration as effective organization and management, he was a master. He believed in crystal-clear channels, in precise and exact delineations of authority and responsibility, and in simplified and streamlined organizations and procedures to effect them. Without any of the invidious connotations that the term has come to carry, he was the original efficiency expert. He knew this and he took a more modest pride in it than his magnificent qualifications justified. The only time I ever heard him boast about it a bit, and then halfheartedly—or as halfheartedly as he could do anything—was when he casually remarked on the growth of professional management consultant firms, who were then being given large contracts by elements of the Department of Defense and other governmental agencies to study the effectiveness of selected offices and recommend improvements.

"Just what I've spent the last ten years of my service doing," said General Shope, "and not for a hundred thousand dollars a throw, either." He grinned and turned the conversation to other matters.

Shope's management ability, his vision, and his intellect, together with his liking for and open-mindedness to new concepts and new ideas and his down-to-earth ability to clear away the underbrush that obscured essential issues, revitalized and stabilized one large agency that he headed for a long and crucial period. It was a time of flux in Department of the Army official doctrine in that particular area of operations, and a period when many far-reaching proposals for changes originated among appointed civilian officials. Shope was easily the intellectual master of most of these people. He saved the Army and his staff section from many futile and abortive experiments. His foresight precluded many outlandish and intolerable proposals, since he was always prepared with, and had often already put into effect, unconventional and radical-appearing but essentially sound and workable proposals and changes of his own. And his calm, cold, and incisive outspokenness usually won out against proposals for change when he was convinced that no change was needed. Unquestionably he was the most effective and successful head that mammoth agency has ever had, and at a critical time in its development.

It was here that he showed the full range of his qualities: a brilliant and complex man of almost awe-inspiring ability; a crusty and difficult leader, a ramrodder who never took no for an answer; a master organizer and administrator for whom no job could be too big. Clearly, a superior contender for the position of Chief of Staff.

General Shope, like General Atcheson, believed in small staffs: sleek, streamlined, agile, thorough, and hard-working—overworked, really. Both Shope and Atcheson recognized that large bodies tend to move slowly and to generate unnecessary activity. They kept their staffs and their entourage, both personal and official, relatively small.

GENERAL LATIMER (as I'll call the third member of our gallery) was, on the other hand, a large-staff man, an empire-builder, if you will. When General Latimer succeeded Shope as head of the agency over which Shope had presided for nearly three years, he expanded Shope's personal office secretariat of a lieutenant colonel and a major to a colonel, a lieutenant colonel, two majors, and a captain. Latimer had something of Shope's passion for precision and clarity, but he sought to obtain it by completeness, rather than by compression, brevity, and incisiveness. Latimer was an "utter" man: he demanded utter completeness.

He required that the papers presented to him by his staff be formal staff studies, following exactly, to the last jot and tittle, the form in the manual. The lengthy, elevated, and somewhat labored formal staff study at once replaced the informal memorandum which included the essentials of a formal staff study, but greatly boiled down and streamlined, and which had been customary under Shope. Under Latimer, all staff studies must be utterly complete. Assumptions and facts so obvious and relatively unimportant or so nearly irrelevant that Shope's uncluttered mind would have been outraged over their inclusion in any paper to reach his desk, became the subject of vitriolic comment if omitted from a paper received by Latimer.

Latimer's ability was essentially inclusive rather than selective. He had some obscure psychological need to be assured and reassured that every facet of a problem had been developed in every detail, whether consequential or not. This is not to say that he lacked the faculty for distinguishing essentials from nonessentials. He most unmistakably did have this faculty. And he could carry in his mind's eye all the minutiae, consequential or not, and come out with an extremely able solution. But he became uneasy if anything, however trivial, was omitted from consideration.

So under Latimer the staff moved ponderously and slowly to produce the exhaustive completeness and the lengthy staff studies he required. This was the way he wanted the staff to perform: with his own deliberate, crunching thoroughness. It was startling to see Shope's lively, alert, streamlined establishment converted into a mill of the gods which ground slowly and exceedingly small.

General Latimer had stood fairly high at West Point, but he had not been a particularly marked man during his junior years. Both Atcheson and Shope had attained their early promotions to general officer in command positions in the combat arms during World War II, by virtue of command ability and leadership. Unlike them, Latimer had gained his in staff positions during World War II by virtue of his massive thoroughness in staff work. Most of his service as a senior general officer had been in high staff positions, principally in his own specialty. He had had one brief tour as a division commander, to qualify and purify him for three-star promotion. He resented having had to accept this duty, for he was somewhat contemptous of "command ability" and of the stress the Army placed on it.

Latimer had none of Atcheson's or Shope's touch or facility for timing and feasibility. On the contrary, he appeared to enjoy—almost to glory in—moving at the wrong time and place, so long as he was convinced that the direction and scope of the movement were proper. A big man, but cautious, reserved, phlegmatic and withdrawn in temperament and presence, he had an iron jaw and an iron will which he did not hesitate to display. "I am prepared to debate that proposition" was his habitual rejoinder when major difficulties of timing, feasibility, or acceptability were presented to him. His tendency was to plow the difficulties under and steamroller forward. Sometimes he won with this approach. More often he lost, and he lost on some important issues that Shope would have won through delay and thorough preparation, or in which Atcheson would have swept to victory through his skill at presentation and the persuasiveness of his personality and presence.

Latimer's characteristic attitude in dealing with his subordinates was a cool detachment broken only by reproval or reprimand. He never complimented; he never praised. In fact, he preached "Never praise." He held and stated publicly, in addressing assemblages of newly assigned officers, the firm conviction that the proper reward of a competent officer was the sense of duty well done, of pride in the confidence reposed in him by his superiors, without any need for words of appreciation or encouragement. And he practiced what he preached. Where Atcheson would have said a few graceful words of approval

for a difficult task accomplished to his liking, and where Shope would have flashed an "OK" or "That's fine" accompanied by a fleeting, half-embarrassed little smile, Latimer would remain silent. He might nod once, as he signed the paper he was approving. He seemed incapable of expressing, at least to a co-worker's face, any thanks or commendation. Yet beneath his cold and aloof exterior, he had a strong vein of sentimentality which would burst forth on rare occasions, usually in connection with his family ties or with some friend of long standing.

Quite aside from his chilly manner, working under Latimer was far more difficult than under Atcheson or Shope. The major difficulty was his frequent practice of saying simply "No" to a proposed solution and thus throwing the problem without further guidance back in the lap of the rebuffed and baffled staff officer. It is not accurate or fair to say that he sulked, as one exasperated staff officer once said, but it is *almost* accurate and fair. In working for Latimer you often felt you were sailing in treacherous, cold, and uncharted waters, strewn with the jagged wrecks of previous voyagers, cluttered with sharp reefs for the unwary. There *must* be a safe channel, somewhere, because others had safely negotiated these waters before, but the channel was unmarked and it would remain unmarked so far as Latimer was concerned. When safe harbor was finally made, and it was reached more frequently than not, the staff officer often felt it was due more to luck and chance than to ability, acumen, or foresight on his part. Certainly it was due to no assistance or guidance from Latimer.

In searching for acceptable solutions for Latimer, the only certainty was that the approach had better be a conventional and orthodox one, for he had none of Atcheson's or Shope's distaste for the stereotyped and their liking for the fresh, the new, and the unorthodox. Although his mind was not closed to new ideas, usually they repelled him. He preferred excellence to be in a well-trodden path.

Nor did Latimer possess any of Atcheson's easy and successful disregard for the bounds of his authority or Shope's meticulous regard for it. For a man who was generally cautious and conservative in his approach, he had a remarkable ability, like Sir Francis Bacon, to take all the world for his province. He simply ignored the bounds of his authority and the propriety of leaping roughshod into another commander's or staff officer's area of responsibility. On large issues that were presented to him, at the highest level, for comment or concurrence from the point of view of his assigned responsibilities, more often than not he would disregard, brush aside, or subordinate the question of the comment appropriate to his position. Instead, he would attack the problem and the issues from the broader point of view: that of a second and co-equal proponent who assumed that he too had the primary responsibility. Usually this would enrage the lieutenant general who headed the office having the assigned primary responsibility and who felt, somewhat justifiably, that General Latimer was meddling in his business and generally muddying the waters. Latimer went right on, unperturbed, maintaining with vigor and determination his strongly felt views as to how the other man should solve his problem.

Latimer was not quite logical enough to grant to others the same privileges in his area of responsibility that he assumed in theirs. He appeared to be genuinely surprised on the rare occasions when attempted encroachments on his area occurred, and he fought them tooth and claw, and with some indications that he felt he was being badly used and unjustifiably mistreated. Had he been a man of wit and humor, with any of Atcheson's broad sense of fun or Shope's keen and acidulous wit, you might have thought his surprise at someone's venturing to express an opinion in his area of responsibility was more assumed than genuine, more ironic than real. But Latimer was a singularly humorless man.

In spite of General Latimer's peculiarities in dealing with his own staff and his frustrating and frustrated attempts at breaking out of his area of responsibility, he turned in an exceptionally fine performance in a position of great importance. He had enormous ability and knowledge within his specialty, and he had great tenacity and complete confidence in himself, if in few others. You learned to respect these qualities, if a bit grudgingly. To become warmly devoted to him appeared unlikely. To fail to respect him for his qualities of intellect and character was impossible.

Like most senior military officers, Atcheson, Shope and Latimer each had a stable of younger officers with whom they had worked from time to time over the years, of whose capabilities they had intimate knowledge; whose judgment in certain fields they trusted implicitly; and whom they sought to get on their staffs whenever their protégés were available for reassignment and sometimes when they were not so readily available. Atcheson's and Shope's people were uniformly outstanding and would have been top-flight batters, fielders, and pinch hitters in any man's league. Among them was undoubtedly a future Army Chief of Staff or two.

Latimer's protégés were not quite of the same caliber. In general—there were exceptions, of course—his especially picked officers lacked the breadth, depth, and versatility that Atcheson's and Shope's had. Latimer devoted far less time to key personnel matters than did either Atche-

son or Shope. Both Atcheson and Shope were in effect their own G1, personnel chief.

Atcheson and Shope operated instinctively on this principle. In selecting people for their staffs they relied, first, on personal knowledge of the man; second, if he was unknown to them, on a combination of what he had done in the past, how well he had done it, and what his capabilities were likely to be in the particular field of the job to be filled. Neither required that the prospect have had specific experience in the exact field of the particular job. Latimer did require this, as an absolute criterion, and would consider no officer, no matter how capable and brilliant, if he had not had specific experience in the exact type of work to be done. He believed in specialists, and he trusted little but experience. He thus limited his field of selection greatly, and he deprived himself of some very fine officers who would have performed splendidly for him.

The three differed radically in their general methods of informal meetings and personal dealings with members of their staffs. On a topic on which he needed information or on a matter being presented to him for discussion and decision, Atcheson didn't give a damn who, or how many people, came into the session in his office to provide him with the facts. The chief of the responsible staff division could do it, he could send one of his Indians, or they could come in together. Shope preferred, although he didn't particularly make an issue of it, to be briefed by an Indian alone; the Indian's briefing would naturally and explicitly carry the prior approval of his chief. Shope would say to a chief: "Why waste your time sitting here listening to something you've already gone over in detail and the presentation of which you approve? If I don't like the proposed solution, I'll let you know. Go on about your business." This attitude stemmed in part from Shope's natural shy dislike of a delegation in his office, in part from the fact that he was at his brilliant best when dealing directly with one person. He enjoyed and valued the direct contact with junior officers—his liking for fresh and unhackneyed viewpoints—and was characteristically impatient at any waste of time or effort.

Latimer, on the other hand, usually insisted that the chief, and the chief alone, present the matter to him. He would never deal directly with an Indian alone, and he was usually quite obviously put out if a chief brought an Indian along to provide special knowledge or background. With Latimer's propensity for detail and minutiae, this meant that the chief must spend much time picking the brains of the Indian for the minutiae before he went in alone to brief Latimer. After a few experiences with Latimer's methods, however, most of his major subordinates infinitely preferred to meet with Latimer alone. It was less embarrassing to receive his detached disapproval, his unexpanded "No," or his frequently maximum total comment "I do not like the proposed solution" in the absence of one's own subordinates who, had they been present, would inevitably ask their own chief later, outside Latimer's office, "But what *does* General Latimer want us to do?" The only possible immediate reply was a shrug.

These three unusual and remarkable officers, each a powerful and distinctive person, each enormously capable and rich in varied experience, each preeminently successful in his own characteristic way, were to attain the highest rank possible in the peacetime Army. Atcheson's achievement was the natural and seemingly easy and effortless success of a happy, elevated, and complementary combination of intellect, character, and personality, all of the first order. He would have been preeminently successful in any field of endeavor, and he would have inevitably risen to the highest position. Shope's achievement was the triumph of a brilliant and powerful intellect and a masterful character over shyness and sensitivity cloaked by, and in spite of, difficult, rough, and thorny surface traits. Shope's position in any pursuit other than the military service would have been high indeed, but less naturally and less inevitably so than Atcheson's. Given a happy combination of the right situation and the right timing, his brilliance of intellect would have unquestionably raised him to *a* top position, if not *the* top one. Latimer's achievement was perhaps the most extraordinary and speculative of all: the hard-fought victory of massive solidity of character and intelligence over the handicaps of a glacially cold and monolithically forbidding nature. The degree of his success in other than military pursuits would have been considerably less assured than that of the other two. While undoubtedly he would have had a career which would have been termed "a success" no matter what field he was cast into, I doubt that he could have attained a position of preeminence comparable to four-star rank in any field except the military. There the hierarchical structure and the built-in safeguards protected him against the drawbacks of his peculiarities.

Most of us working with General Atcheson felt for him the highest respect and admiration. We also felt a warm devotion for him and a desire to emulate him. For General Shope we felt the highest respect and admiration, but he was a hard man to become devoted to, and his intellect and talents were so dazzlingly spectacular that emulation seemed almost out of the question. For General Latimer our feeling was merely one of high respect. Perhaps that is what each of them would have wanted us to feel.

Put Your Mind to Mayhem

What the global frontier fighter needs is an all-purpose commit-it-yourself death kit

By CHARLES A. DODSON

Short of the Second Coming, mankind will continue to devise ways and means of doing each other in. And, oddly enough, in this era of nuclear fission and fusion and chemical and biological poisons, other men in jungles and city garrets are thinking more and more along the lines of doing the job in makeshift ways, with what most easily comes to hand.

These are the unconventional fighters who combine extremely sketchy knowledge of explosives, ballistics, and metallurgy to fabricate weapons which can produce just as severe a case of rigor mortis as an M14 bullet.

Anyone who has ever hung his chin over a clothesline in darkness can attest to the effect of such an accident. But what when such accidents become contrived; when the victim is led to slaughter in ways most commonplace?

Reports coming out of Vietnam say that the Viet Cong guerrillas are hardly armed with the latest in Davy Crocketts or even modern rifles, but they continue to harass and tie up innumerable pro-West troops with simple weapons such as the *panji pit,* sharpened stakes in a camouflaged pit. The Viet Cong poison the stakes with everything from Asiatic alkaloids to human offal, and even if the victim isn't impaled outright, the chances of agonizing death by poison or tetanus are extremely good. Too, the Viet Cong have a sweet little custom of driving nails into a board at an angle, and burying it, points up, just under the mud of a roadway or path. In an Oriental area where most people wear sneakers or go barefoot, the ugly wounds caused by this device can, even without complications, lay up a victim for days.

Outrageous slings, arrows and ballistics

The tubeless tire and the synthetic-rubber inner tube may have done much to preserve the U. S. songbird population, but they have certainly played hob with the schoolboy's ability to manufacture a decent slingshot, an article which, in competent hands, can send a lead slug or ball-bearing crashing through a skull from ambush. To the reasonably adept slingshooter who aims instinctively, the weapon has an additional advantage of being an excellent piece of pocket ordnance for nocturnal use.

We'll ignore the swing-around-the-head slingshot with which David brought down Goliath since practice, almost from infancy, is necessary to become proficient in its use. But there are many home-made missile-hurling weapons which will serve the underground fighter very well. One of the most basic is the bow and arrow with which the user can become reasonably proficient in only a short time. Bows can be made of almost any material from horn to wood. At the same time the ammunition (arrows) can be tipped for penetration by almost any means from hardening in fire to attaching steel barbs.

Although it cannot be fired as rapidly as the longbow, the crossbow is readily adaptable for use by the tyro undergrounder. Like the longbow arrow, the crossbow bolt kills by profuse hemorrhage. Soundless, both are admirable weapons for ambush or night use. (Here it might be noted that certain expert bowmen in the Special Forces have extended the range of grenades by adapting them for use with longbow arrows.)

"Combat in cities" is, essentially, a military term just as "rumble" is juvenile delinquent jargon. But while the military uses the best issue weapons for such actions, the kids themselves have come up with some doozies to supplement their switchblades. Some scrap wood, a piece of tubing, rubber bands, and the JD has a zip-gun. When juveniles can come up with such weapons,

how much greater the ingenuity of desperate grownups when they put their minds to mayhem?

One Ordnance expert quotes Pancho Villa, the Mexican bandit, as saying that "if there were only one censored kind of rifle in one misbegotten caliber, I would have conquered the whole unmentionable country in 90 days." It is on the record that he did pretty well by such field expedients as crushing black-powder mining explosive into finer powder and reloading his own cartridges.

Many and weird were the devices used by Filipino guerrillas during the Japanese occupation. They filed bullets out of bar brass curtain rods and reloaded Japanese cartridges; made cannon as well as shotguns out of old pipe and even cut HE with sawdust to reduce the danger in using it as a propellant.

(As noted in "The Rescue of Lieutenant Gillmore," ARMY, June 1961, the Filipino natives used a pretty effective device against Americans at the turn of the century. Skillfully placed bamboo barbs would penetrate a man's foot—shoe and all—turning him into a litter-case far from home base, supplies and proper medical treatment.)

There is some evidence that our military assistance may not be completely right in some areas. In a recent column, Mr. Marquis Childs remarked that the U. S. had goofed in putting heavy American weapons into the tiny hands of lowland Laotians. He could have been referring to the M1 rifle and, perhaps, the U. S. Army steel pot headgear—both of which can feel like ten times their weight in lead at the end of a day's hike—even to the husky Yank. Perhaps a good, lighter, bolt-action .22 might be a better weapon to send —at least to some areas. A writer in ARMY advocated a lighter rifle for our lighter-framed Communist-fighting friends in the Far East several years ago (in the April 1958 issue, to be exact. You will find a Cerebration called "Trim the M1 to Fit Our Allies").

Swords, shivs and shafts

"The sword, indeed," said Bulwer-Lytton, "is never out of fashion—the Devil has care of *that*."

Edged and pointed weapons are among the most potent of what another writer has called "the tools of the desperate undergrounders." When a man himself, or a partisan blacksmith, can convert an old automobile spring leaf into a blade, it may not be the equal of "Excalibur," Prince Valiant's "Singing Sword," or Toledo's tempered product, but it's an effective neck-hacker for close work.

(My own prized frog-sticker, which accompanied me through two wars, was fashioned for me, for four bits, out of a wornout "file, flat, bastard" by a CCC camp blacksmith in 1939.)

Our American ancestors not only knocked down whole forests with the terrible double-edged axe but made good use of it as a close-in defensive weapon against Indians. The Indians, themselves, didn't do too badly in the bashing department with the tomahawk which was little more than a hand axe. The Boy Scout type hatchet, with its blunt poll side, can be a potent weapon to stun a man or kill him silently from behind by cutting the spinal cord either at the neck or with a blow between the shoulder blades. Coinage of the phrase "hatchet man," which came out of the San Francisco tong wars among the Chinese population, was based on wide usage of the weapon

which could be easily concealed in the flowing sleeves.

The prosaic ice pick can be an effective permanent silencer. Proper technique is to grab the victim with the left hand covering nose and mouth to prevent outcry, jerking him sharply backward and inserting the point of the ice pick or slender-bladed knife under the right ear with an inward and upward thrust. (Southpaws can reverse the procedure.) And, it's not nearly as messy as throat-cutting.

Almost any type of metal can be turned into a pointed or edged weapon, but woods also offer possibilities. There's hardly an area in the world

that doesn't produce at least one kind of wood which, when used as is or hardened by fire, will not serve as spear or dagger.

Though not actually a pointed or edged weapon, piano or other fine, strong steel wire readily converts into an admirable garrote. Stretched across a road at the proper level, it can easily decapitate the unwary driver or horseman.

It isn't too difficult for even a young man to don the dress and simulate the hobble of an ancient—and the cane upon which he leans can instantly unsheath a blade that can puncture the heart of the blackest knave or one as pure as Galahad's.

Putting it bluntly

As dear to the heart of the underground fighter as to the detective story writer is the "blunt object." The variety is infinite—they come in all shapes and sizes. The bar of GI soap in a GI sock, the cosh, the blackjack or slung shot, baseball bat, pick handle, lead pipe, length of chain and the ubiquitous hammer hark back to caveman days; but they will never be replaced as virtually noiseless killers. All you need is stealth and enough courage and muscle to swing them.

Wooden shoes in the works

A primary weapon of the underground is, of course, sabotage. Most vehicles and machines require almost constant maintenance to keep them in working order but, when a sneaky saboteur gets into the act, one man alone can tie up the mobile capability of an entire unit. It's as simple as pouring a bit of linseed oil or sugar into a gasoline tank, some sand or emery dust into a crankcase. Tire slashing can, at least temporarily, immobilize an outfit, and a single saboteur can, in greater safety, scatter simple three-pronged puncture-producing barbs (tetrahedrons) over a truck route.

Nor is an armored column safe from the guerrilla who's bent on destruction. If anything, tankers fear fire more than armor-piercing projectiles, and it's here that the Molotov cocktail proves to be one of the most effective but simple weapons yet invented. A gasoline-filled wine bottle with a bit of waste for a wick, and the guerrilla fighter is in business. And wicked business it is, too, for in spite of its all-metal construction, a tank must run on fuel and the cocktail quickly spreads fire to the fuel tank. The crew then has only two choices: remain and roast, or abandon ship to face small-arms fire.

One of the most clever tools of the saboteur-assassin is the "coal-bomb," which works this way: a ball of clay, containing high explosive and a detonator, is moulded into the irregular shape of a lump of coal. Coal dust is then patted into the surface until it completely resembles the coal already in the building. Shoveled into a stove or furnace, its performance can, literally, bring down the house—and its occupants.

Acts of sabotage are limited only by man's imagination. The loosened railroad tie; that popular underworld device, the car bomb set off by the victim's stepping on the starter; poisons administered in dozens of different ways—all can make the lives of occupation troops ones of continual dread.

When, if Darwin was right, Man first came down out of his tree, there is little doubt that one of his first acts was to pick up rock or club to defend himself against the fearful monsters he encountered.

Man's opposed thumb and fingers were surely grown to grasp club, cutting and stabbing tool and to squeeze a trigger. And, if he can't buy or steal them, the results may be crude; but he'll somehow manage to provide himself with death-dealing devices.

Durer's Four Horsemen of the Apocalypse suggests the mission of Civil Affairs—to bring order out of chaos and to wage relentless war against famine, pestilence, death

A Bigger Job for Civil Affairs

Emergent nations need the help of Civil Affairs

Colonel JOHN J. DUFFY

THE Civil Affairs/Military Government officer is well remembered by those who inhabited combat areas during World War II. To most the term probably brings back a recollection of the role played by Frederic March in the movie, "A Bell for Adano," where the military government officer had the complete run of an Italian town. Or they may only remember a crowd of "fat cat" rear-area staff officers who plastered signs all over the towns of Europe that read OFF LIMITS TO ALL TROOPS. Perhaps at the time some veterans of World War II would have grudgingly admitted that maybe the function of CAMG was necessary; but why allow those fellows to be called soldiers?

It wasn't until the war in Korea that I acquired a different and broader outlook on the role of civil affairs. Suddenly—at least for me—it ceased to be a rear-area function and became instead a very important front-line task. Let me explain.

During one stage of the Korean war I served on the very important staff that was planning the Inchon landing. Naturally, we tried to visualize in advance the difficulties which would be encountered by the troops who were to make the assault landing. In our prescience, we decided that one major problem would be the handling of the thousands of civilians who might interfere with our military operations. Most of them would be friendly, of course, and would welcome United Nations troops, but certainly among them would be some communists, and even some enemy line-crossers. Something would have to be done to preclude interference with operations, to screen saboteurs and subversives, and even to turn the presence of so many civilians to our advantage rather than have them become an encumbrance. Here, then, was a front-line civil affairs type of operation, quite different from that faced by World War II CAMG, and certainly more acute if not more demanding.

Concept confirmed

Prior to the Inchon landing we worked out a plan, the details of which need not concern us here. What is important is the fact that the difficulties we foresaw did materialize. Above all, the concept of the need for civil affairs support at the very outset of military operations was confirmed.

It is easy to visualize that in any future military operations—for example, in many countries of Asia—the problem of handling the civilian populace will indeed be a critical one. But perhaps we should not confine our thinking to Asia, but reflect also on the operations of 1940, when the Germans invaded France. You will recall that the cluttering of French roads by civilians seriously impeded the movement of Allied troops, and this contributed materially to German successes.

It takes little imagination to transpose the difficulties of the French during 1940 and the UN forces in Korea, to a set of requirements for a future conflict. Certainly such a set of requirements will include the need for civil affairs planning in advance of any emergency, and an active program during the initial stages of most operations.

Besides its functions in future emergencies or

hostilities, during the current period of the Cold War civil affairs has an equally important but less tangible role. This might be called the civil action role, but to attempt to define that function in a few words would be to leave it generally misunderstood. So we'll describe it in the context of the nations of Asia in which we are interested.

Most of these nations share common characteristics. They are in process of emerging from an ancient, though by no means primitive, way of life, and projecting themselves into the international arena of our times. Quite often the complicated national and international forces of the twentieth century conflict intensely with ancient customs and moral, physical, and spiritual traditions. Extensive adjustments have to be made in education, economics, government, and even in basic family relationships. These adjustments, readjustments and advances must be effected before these new states will be able to assume their rightful places in the community of nations.

Military aid to civilians

For more than a decade the United States has been helping the peoples of Asia to retain their freedom as well as to improve their standards of living. One of the very first acts in both these tasks was the proffer of military and economic assistance. Some Americans at first thought might ask why military assistance is so important. However, upon further reflection it becomes quite clear that in our time, if a nation is to remain independent and insure internal as well as external security for its people, it must have honest, courageous, and loyal armed services.

For this reason the United States has given considerable attention to the need for security forces. Our efforts have included the training of foreign officers at our service schools and in our universities. We have supplied arms and equipment for their armed forces, and have sent instructors to teach the functioning and use of arms and equipment.

As a result of these joint efforts, most of these countries are developing military organizations which are in general sound and which are staffed by officers and men who have advanced more rapidly in relative terms than have some in other branches of the national government. These service men understand the value of organization, of modern means of communication and transportation, of sanitation and health, of basic engineering and, above all, the need for resistance to communist aggression.

The rapid training and education of their armed forces have resulted in bringing to many of these countries a new, virile nucleus of national power. In some instances this is the only real source of national strength and unity. Many of the other phases of national life, which we in the United States take for granted, must still be developed before these nations can become strong. Among other elements are such things as a sound and growing economic base, a modern and capable governmental organization, a strong financial system, dependable communications and transportation networks and, above all, an informed, loyal, responsive populace.

The leaders of these new nations realize their basic national shortcomings and are eager to overcome them. As can be expected, the most eager are apt to be the trained military leaders. They have watched their armed services develop rapidly and yearn for equal progress for the civilian portions of their nations.

Civil affairs must have backing

This, then, is the general situation in the nations we support, with the most rapid development occurring in the armed services. The questions now arise: How can those underdeveloped nations best utilize this rapidly developing base of national power—its armed services—in other phases of national development while it still performs its primary mission of providing national security? Can the special knowledge and capabilities of the members of the armed services be used to help advance other phases of national life? The questions can be answered in the affirmative, provided civil affairs is on the job and has proper command support.

At this point it is interesting to observe how the communists use military power when they subjugate a nation, and then compare their practice with the concept I will spell out. The communists expand their military power into what they call the politico-military field. Such expansion results in dictatorship by the armed forces with brutality, bloodshed, force and terror at all levels of national life. We have seen this pattern unfold in Red China, North Korea, North Vietnam, and Tibet, as well as in Europe. At the present time the communists are attempting to apply the same military and political methods in various other nations of Asia.

Many observers of the newly emerging nations of Asia, as well as students of other areas of the world, urge that free nations counter the communist threat by using similar methods; that is, to move the military into the political field. This has happened in some countries, such as Egypt, and military dictatorships have resulted. Fortunately, this is not the only way in which the armed forces can be used effectively in speeding up national development, nor is it the best.

This growing base of national power, represented by the armed forces, must not be used to suppress the people nor to impose government

from above. Our American tradition maintains that the armed forces and the government are the servants and not the masters of the people. The growing civil capability of members of local armed forces can be projected outside the normal sphere in such a way as to supplement the civil role of the government rather than to supplant it. It is the responsibility of the military to support the civil authority, not to usurp it. That is the American philosophy, and it is in keeping with our traditions. In the long run it will prove superior to communist theory.

Civil role of the military

In supplementing the civil efforts of government some of the most dramatic and democratic results are being achieved by local armed forces, supported by aid from the United States. The projects on which these forces are being employed represent effective use of military services in building a solid, democratic base in underdeveloped nations. A relationship is being fostered between the armed forces and the people which is not the oppressive communist-type politico-military relationship; rather, it is a democratic relationship in which the armed forces serve the people in both peace and war. This phase of the activities of the armed forces, in which the military assist in economic or community development projects, is what I have referred to as the civil role.

Such uses of armed services to assist the civilian community and the relationship which ensues are not new to Americans. They have been known to and used by our armed forces and the American people since the days of our own Revolution. The concept goes back to the founders of our nation and to our first President. Americans are prone to forget the important and continuing role their armed services have played during peacetime in the development and growth of the United States.

We need only recall the establishment of frontier posts around which many of our cities have sprung: Fort Pitt, Fort Dearborn, Fort Smith, Fort Wayne, and others. The roads connecting frontier posts became national highways. The communications systems that connected fort with fort served the civilian as well as the military community. In other fields, we can recall the construction of the Panama Canal, the civil works of the Corps of Engineers, discoveries by Army doctors, the government of remote territories. These are vital national tasks which the armed services have performed and still perform for the nation and its people.

In the field of education, the armed forces contributed with post schools at frontier stations. The founders of our first civilian engineering school, Massachusetts Institute of Technology, came from the Army. Advances in medicine begun by military surgeons have been passed on to the people, and military medical services have served the civilian community in local disasters during peacetime as well as in war. Above all, perhaps the greatest contribution to the nation is realization of the fact that the members of the armed services have always stood for honesty, integrity and devotion to God and Country while at the same time assuring the firm foundation of security upon which a democracy must be built.

As we review the history of the U. S. armed services, it becomes clear that while Americans have no desire to establish other peoples and their governments in our own image, we do have a duty to pass on to them some of our experiences from which they can profit. It is equally clear that we in the armed services can pass on to the services of the newly independent nations ideas from our past military and naval history on how they can best serve their own countries and their peoples.

Civil Affairs contributions

Space does not permit spelling out the details, but they range from conducting classes in basic education to the civil affairs activities encompassed in training publications. We might well ask if the projects concerned in civil action are really in the province of the commander and his entire staff. The answer is that they are, just as training is a responsibility of all. But to coordinate these tasks, to give them a pointed sense of direction and constant stimulation requires the concentrated efforts of an important staff group: the civil affairs section.

There are two other quasi-military activities which, while highly important under certain conditions, are not considered a direct function of any staff section. These are military assistance to civilians in times of disaster, and coordination of military operations with civil defense efforts. The scope of these activities parallels closely the functions of civil affairs in wartime. Actually, the problems encountered are about the same in all instances.

Without going into the details concerning the parallels in these activities, I suggest that if close coordination between the civil defense agencies and those of the armed forces is needed, then civil affairs is the staff section which thoroughly understands the capabilities and problems of both. Again, in the case of disasters to civilians, the civil affairs officer is in an ideal position to plan, train, and coordinate the military effort needed to supplement the civilian force.

This is the 1961 concept of the civil affairs officer. We can see he has a bigger job than placing towns off limits or acquiring a bell for Adano.

The Art of Operations

Soviet theoreticians have wedged what they call the Operational Art between tactics and strategy but to little apparent practical purpose.

By WALTER DARNELL JACOBS

MOST military theorists and practitioners, past and present, have been satisfied with the traditional division of war into tactics and strategy.

Soviet military thinkers, not content with old forms and formulas, insist that, under conditions of modern warfare, tactics and strategy are just not enough for a proper understanding of troop leading. There is a new element, they say, and they call it "the operational art."

In the Soviet view, the operational art falls somewhere between tactics and strategy. Saying this, however, does not to any great extent explain the Soviet concept of the operational art, or why military writers in the Soviet Union give so much attention to the idea. If we are to gain some understanding of the operational art as it is used today in the USSR and its satellites, it may be useful to analyze some Soviet writings on the subject.

Obviously, Western military thought virtually excludes the operational art as a theoretical concept. If, as a result, there is a big gap in Western theory on war, we should not be too proud that Soviet writers have to point this out to us. If there is no gap and if the concept of the operational art is unnecessary and redundant, we should not be too modest in reasserting the superiority of our traditional concepts in the field of the military arts.

Development of the concept

In *Soviet Military Doctrine,* Raymond L. Garthoff states that the concept of the operational art was developed by two officers of the Imperial Army just before the First World War. It was carried into the Red Army by General A. A. Svechin, an Imperial Army officer who joined the Reds and became one of the most active writers on military theory during the early days of the Red Army.

Svechin's chief work was *Strategy,* which went through several editions during his lifetime and is still published in the Soviet Union. Svechin distinguishes between tactics, the operational art, and strategy. In keeping with its title, however, Svechin devotes most of his book to strategy. Nevertheless, his contribution to the development of the concept of the operational art is considerable, and he at least deserves the distinction of having introduced the concept into Soviet military circles.

A much broader exposition on the operational art was made in 1929 by V. K. Triandafillov. His book, *The Character of the Operations of Modern Armies* (which, like Svechin's, went through several editions) lists some reasons for the need of a concept of the operational art. Triandafillov cites the development of modern weapons and improved communications. These developments changed warfare basically, he claims, by extending the individual commander's span of control. Thus, what used to be a simple matter of tactics became a much more complicated affair—though something not quite within the realm of strategy. To Triandafillov, this new area could properly be termed the area of the operational art.

In Triandafillov's view, the broadened scope of modern war, the greater numbers of those participating in combat, and the improved technical quality of the weapons used created the need for a new approach to the study of tactics and strat-

egy. He suggested that, in modern war, actions which used to be simply considered as operations had become strategy. The strategist could no longer be concerned with individual operations. Modern war made that inconvenient and inefficient, if not impossible. The commander who would now be in charge of operations was no strategist; yet, he was certainly more than a tactician. Triandafillov decided that he should be called a master of the operational art.

The Triandafillov view took root in Soviet military writing. The influence of his concept of the operational art (and the similar views of Kolenkovskii and Isserson) is discernible in the article on the operational art in the *Great Soviet Encyclopedia.* This volume of the first edition was published in 1939, and hence is not influenced by Soviet actions against Finland, nor by World War II. This article treated the theory of the operational art as if it were a part of the official dogma on warfare. In typical Soviet redundant style, the operational art is defined as the organization and execution of military operations. Here, the controlling word is *operations.* In the encyclopedia definition, tactics are those actions directed by corps and below. Strategy is the concern of groups of fronts and higher formations. This leaves the area of the operational art to fronts and armies. (Soviet "front" corresponds roughly to U. S. army group.)

Nevertheless, Soviet acceptance of the concept continued through the military experiences of World War II, and was hardened by them. The post-Stalin outpouring of works on military subjects has been characterized by an increasing emphasis on the principles of the operational art. Typical is a 1960 publication of the Frunze Military Academy, *The Combat Course of the Soviet Armed Forces.* This is a military history of all the combat actions of the Soviet Army from the 1917 revolution to the present (not, however, including the crushing of the Hungarian revolt). It also devotes considerable space to the development of military theory in the USSR.

The Frunze Academy study gives Lenin and Frunze the usual places of honor in the creation of Soviet military doctrine. Neither is mentioned directly in the discussions of the operational art. Svechin also is ignored, but Triandafillov is quoted with approval.

Part of Soviet military theory

The study states that the operational art is a part of the Soviet military theory and that its emergence was a consequence of basic changes in the methods and forms of waging combat. Developments such as the railroad and the telegraph are mentioned as examples of these basic changes. After World War I, it became apparent that future wars would require close cooperation between the various arms and, also, greater efforts by the civilians of the belligerents. All these efforts would have to be coordinated in a common cause. The broadened scope of battle also required the creation of new combat groupings: fronts and armies. Control of the new combat groupings fell in the area of the operational art. The coordination of operations toward the common goal passed into the realm of strategy.

It can be seen that these Soviet discussions of the operational art are focused on the First World War and on the Soviet civil war of 1918-20. In the Frunze Academy book, discussions on the development of the concept during World War II are historical and expository. The theoretical and doctrinal development of the concept resulting from recent battle actions are not directly discussed. This doctrinal examination has, however, been made in a recent monograph by Major General Vasilii Aleksandrovich Semenov.

General Semenov's book, *A Short Sketch of the Development of the Soviet Operational Art,* was published in 1960. This short sketch (299 pages) is the definitive Soviet work on the subject, both from the historical and the doctrinal viewpoint.

The thoroughness of General Semenov's approach is shown by his statement in the introduction that modern war is a complex of armed, economic, political and ideological struggle. It is significant that a work on a purely military subject, and intended for soldiers, stresses this point. Having made the point, however, Semenov devotes himself chiefly to the armed struggle parts of the complex.

He begins by stating that the "military art is the most important component part of Soviet

military science" and is concerned with "the theory of the means and forms of conducting military actions and war as a whole." The military art itself consists of strategy, the operational art, and tactics. The three elements of the military art are thus defined: "Stategy is concerned with analysis of the preparation and waging of war as armed struggle on the whole, and also its stages. The operational art studies questions of the guidance of operational units of all types of armed forces in operations of various types and sizes. The preparation and conduct of combined arms combat is the object of tactics."

These definitions of strategy, the operational art, and tactics are in general doctrinal terms. That is, they are not stated in the technically precise terms used in the *Great Soviet Encyclopedia* article previously cited. In that article, exact command levels are listed for each division of the military art. Semenov's usage is more typical of recent Soviet writings on the operational art. In such discussions there seems to be a tendency not to be restricted by formal definitions, nor to fix the limit of the operational art rigidly at the level of the front and army. This striving for some flexibility in doctrinal discussions may be a part of the reaction to the strictures of the "permanently operating factors" which followed Stalin's death.

(The Stalinist permanently operating factors are: stability of the rear; morale of the army and the home front; number and quality of divisions; equipment of the army; and quality and capability of commanders.)

Permanently operating factors

General Semenov implies that the permanently operating factors belong to the historical era during which the military art was divided simply into strategy and tactics. They may still be useful, but they should be supplemented by considering elements that influence the outcome of war under modern conditions. Thus, he avoids becoming directly involved in the still-continuing debate on the merits of the Stalinist factors. The current status of the debate is well exemplified by the Semenov approach: the permanently operating factors remain as an important element of Soviet military doctrine, but they are now modified and supplemented. This could hardly have occurred during Stalin's life and, to some extent, is an increase in flexibility and originality in Soviet military thought.

Semenov places the operational art in this general scheme of the permanently operating factors as modified. "Strategy," he asserts, "studies the general laws [of war] from the point of view of the conduct of war as a whole, the operational art in respect to the conduct of operations of all types and scales, and tactics in the area of the conduct of combined arms combat."

He then proceeds to his examination of the operational art, stressing that this is the *Soviet* operational art. The Americans, he sympathizes, still adhere to the ancient strategy-tactics line. All we have in the operational area, according to Semenov, is a system which helps commanders to reach decisions through the use of "statistics, the theory of probabilities, physics, mathematics, electrotechnics, chemistry, biology, economics, etc."

What has happened here is that General Semenov has been reading an American work on operations research, and as a result, concludes that operations research is our substitute for the operational art. The kindest remark to be made about this egregious confusion is that the Soviet concept of the operational art bears no resemblance to the American concept of operations research. For all its current fad in some circles (and quite outside the technological areas for which it was developed), operations research has not been seriously proposed as a means of solving tactical, operational or strategic military problems—although the war-games fans and the computer crews have convinced some that an automaton on the battlefield is superior to an Alexander. So far, however, Army planners have been able to resist this intrusion of ritualistic scientism into an area traditionally reserved to imagination and valor. As even Semenov notes, there are qualitative as well as quantitative factors at work in military operations, and operations research considers only the quantitative.

Semenov's historical review of the operational art begins with the Battle of Slobodzia during the Russo-Turkish War of 1806-1811 and ends with Soviet operations in Manchuria in August 1945. On the basis of these historical examples, Semenov attempts to describe the development of the operational art and the development of Soviet military theory.

Influence of the civil war

He sees the civil war of 1918-20 as most significant in developing the operational art. This is true, first of all, because civil war, as a type, is more decisive than conflicts between nations. This point has been made frequently by Lenin, who said: "Civil war is more serious and cruel than any other war. Thus it has always been in history, beginning with the civil wars of ancient Rome, because international wars always end with deals between the propertied classes, and only in civil war does the oppressed class exert its energies to annihilate the oppressing class and to destroy the economic conditions of existence of this class."

To this Lenin citation Semenov adds the asser-

tion that in revolutionary wars, in class wars, and in civil wars (all of which are varieties of the same thing), the outcome can result only in the complete destruction of the armed forces of one of the belligerent sides, and that "there can be no halfway results in revolutionary war."

From the decisive nature of all civil wars, and that of the Soviet civil war in particular, Semenov derives the result that such conflicts are characterized by maneuver and the offensive. This was the case in the battles and operations of 1918-20. Other peculiarities of this civil war were the widespread use of the telephone and the telegraph, the utilization of railroads, the wide scale of operations, and the great number of fronts. Semenov also cites the operations against the Kronstadt naval base in 1919, as an early example of air, sea and ground combined operations.

The civil war, which Semenov views as a hotbed of the growth of the operational art, was, of course, finally won by the Reds. Semenov lists the reasons for the Soviet victory: the new social and state system of the Soviet republic; the nationality policy of the Soviet power; support of the Red Army by partisans fighting in the rear of the enemy; Soviet foreign policy; support of the Bolshevik revolution by the toilers of the world; and the leadership of the Communist Party.

What has all this to do with the operational art? Very little, indeed, is even of a military nature. Only the point about partisans can be viewed as primarily a military factor. Semenov has apparently deserted his thesis in order to make the necessary kowtows to the party. He figuratively crashes his forehead through the floor when he says: "The Central Committee headed by Lenin directed the entire struggle in the Civil War. All questions of the arrangement of forces, of supply, of the working out of strategic plans and of the planning of the basic strategic operations were decided by the Central Committee."

What the civil war did in the military line was to develop some new types of operations—flanking operations and deep penetrations by combined arms. The White Armies, Semenov says, were capable only of frontal attacks. History says otherwise: some of the classic maneuvers of the civil war were performed by the Whites (Mamontov, Petliura, and others). While he was still in good graces with the Reds, Trotzky said, "We learned maneuver from our enemies." As for frontal assaults, what were costlier or more lacking in imagination than the attacks on Perekop and Chongar by that exponent of maneuver, Frunze?

Adopting the principles

After the Civil War, the Red Army was reorganized to take advantage of the lessons which had been learned about the operational art. Semenov, however, could still bemoan the lack in Soviet literature of any definitive work on all the elements of the operational art. He says that the chief questions to be solved by the Red Army during the thirties were: motorization of the army; correlation of types of troops and types of armed forces; creation of large mechanized units; adopting principles for their employment in operations; means and forms of the preparation and conduct of army and front operations; and logistical support of the operations.

Before World War II and the real test of the Soviet concept, the theory of the operational art had, in Semenov's opinion, reached a reasonable degree of development. In spite of some shortcomings, the operational art before the war was, "the theory and practice, in which, on the basis of an understanding of specific objective laws, are elaborated the principles of the preparation, planning and conduct of operations of all types and scales and the expedient utilization therein of units and organizations."

This prewar theory and practice considered both objective and subjective factors. Among the objective were armaments, combat technology, local conditions, the time of year, and meteorology. The subjective included the conscious activities of the commanders.

The subjective factor that the Soviet citizens just did not like their government was, of course, not considered by Semenov. However, this proved to be quite significant when the Germans attacked in 1941. Semenov defined this subjective factor in objective terms: the prewar operational art

had failed to appreciate the military value of retreat, in both its strategic and its operational uses.

World War II also pointed up the Soviet neglect of antitank operations. There were some other minor errors. All in all, however, Semenov sees World War II as justifying his previous faith in the operational art. Out of that conflict came new material: theory and practice of encirclement; the breakthrough and deep maneuvers; tactical role of aircraft; joint operations of varied types of troops; coordination between groups of fronts; air and sea landings; and air-defense and anti-sea operations. Development of the counterattack on both the operational and strategic levels was highly significant.

What of the future?

If the results of World War II were gratifying to the Soviet theory of the operational art, what of the future? General Semenov sums up his views: "The existence of nuclear weapons and other means of mass destruction, the rapid development of new technological means of struggle, the rocket weapon in particular, the sharp increase in the speed, altitude and range of flight of aviation, the perfection of artillery and tanks, the mechanization and motorization of troops—all these create the material prerequisites for the further development of the military art in general and the operational art in particular."

Semenov adds that Soviet military science proceeds from the assumption that any future war will see the utilization of atomic and other weapons of mass destruction. He rules out local or limited wars.

Of course, it is not possible to reach a judgment concerning the validity of the Soviet concept of the operational art simply on the basis of this review of the literature. Nevertheless, some conclusions seem to be in order.

- The Soviet concept of the operational art is not a fundamental or significant contribution to military science. The traditional division into tactics and strategy seems to fill the needs of modern warfare. The introduction of the idea of a mid-range of operations—somewhere between tactics and strategy—does not, in itself, enhance originality in solving military problems.
- The concept is of greater value to the Soviet Union than it would be to Western nations. This is true because of the limits placed in the USSR on original thinking and imagination. To the Soviet theorist or planner, three types of military actions give the possibility of somewhat greater freedom than do two. This is a rather arbitrary matter, arising from the nature of the Soviet state; it has nothing to do with the intrinsic merits of the concept of the operational art.
- The limits which the Soviets have placed on the operational art are already beginning to be questioned. In the early days, the span was armies and fronts. Now it is being said that the operational art should apply as well to groups of fronts. If the span of the operational art is elastic, whatever advantages the concept has over the older tactics-strategy division disappears. Logically, there is no reason why a fourth or fifth type of military action should not be introduced to go alongside tactics, operations, and strategy.
- As a training or instructing device, the operational art concept simply is not much of a help. All the lessons of Semenov's work (as well as those of Triandafillov and others) could well be made within the limits of tactics and strategy. Thus, the concept is not an aid but simply a complicating device.
- The entire concept is concerned more with form than with substance. In the Soviet Union, this has always been dangerous in all fields of thought. The concept stumbles on the hazards of most "models" and "systems." The time comes when greater effort is spent in fitting data to boxes and classifications than is expended in attempting to solve the problems for which the models and systems were devised.

WESTERN military thinkers are well advised to study this concept of the operational art in order better to realize the Soviet Union's capabilities in future military actions. The West, however, is unlikely to adopt the concept as its own simply because it does not serve to advance the military art.

Academic Degrees in Military Colleges

Why should the military sell itself short in education? **Maj. Gen. STRODE NEWMAN**

THE traditional and legal status of "the military" in the American way of life keeps ultimate control of our Armed Forces under complete civilian direction—and this is as it should be. But there are two psychological by-products of this system that are not as they should be: civilians tend to consider any civilian, per se, as superior to any serviceman; and servicemen tend to sell themselves short.

A case in point is the lack of academic recognition for our great military colleges.

You *can* get a Bachelor of Science degree in Military Science in *civilian* colleges (I know of two such colleges, and some academic credit for military service is given). But in our really wonderful system of military schools and colleges, we do not give degrees in military science. We do issue diplomas, but unless you are well-informed you do not really understand what they represent. Of course it can be said that if the education and knowledge is equivalent to civilian college degrees, what difference does it make? A rose by any other name would smell as sweet, and so on.

As in so many other glib statements, however, there is an inherent fallacy in this one: By any other name the rose would indeed exude its fragrance—but too often would be overlooked and remain unsmelled at all.

I submit that in the flower garden of educational America "the military" should identify its roses with their proper names so that they may be recognized. When a soldier accepts the doctrine "I'm not as good educationally as you," then surely we cannot blame the civilian for saying, "I agree."

Let me summarize in general terms the existing situation as regards non-recognition of military academic training—and then suggest a possible solution.

At present a very limited number of servicemen can get a Master degree or even a Ph.D. (in standard academic subjects) by attending civilian colleges, and certainly this is proper procedure. These degrees can be earned in law, engineering, political science, journalism, chemistry and a vast array of other subjects. But civilian colleges do not give these degrees in military science. How, actually, could they be expected to do this?

On the other hand, with our tremendously effective and versatile system of military schools, why should not *they* give degrees in military science?

Under the word "degrees" in my encyclopedia, the first sentence says: "A title given by a university or college to those who have completed a more or less definitely prescribed course of study" —and we *do* have military colleges and a university which are the best-qualified authorities in our great nation to establish the criteria for and issue degrees in military science.

These colleges and the university are: Army Command and General Staff College, Armed Forces Staff College, Army War College, Naval War College, Air University, Industrial College of the Armed Forces, and National War College.

In this educational system, not only is there an academic progression upward, but equally important—since the number who can go upward is limited—there is fierce competition. Thus, as you rise in the military college system, you are

subject to a type of screening process that civilian academic colleges hardly have.

In fact, our military schools and colleges have an academic program that, in scope and complexity, is horizons beyond anything the average civilian would imagine. In my opinion—and I have extensive first-hand knowledge—this system provides a sound and logical basis for the award of various degrees in military science.

It does not clarify the situation much when you see civilian institutions issue various honorary degrees, with no academic basis. I know of one case where a man was made president of a major civilian college, with only a B.S. degree to his credit. There is nothing wrong in this, but I do wonder a little about the academic logic that then prompted another civilian college to award him an honorary degree, thus making him a "doctor." It does, however, establish a principle of interest—the award of a doctor's degree based on achievement and experience.

American servicemen, whose knowledge and judgment were founded in our system of military schools and colleges, have been outstandingly successful in the application of military science on the battlefields of the world when our national existence was at stake—surely the ultimate test. (This is far better recognized and respected worldwide than by our own people.) But these same servicemen have no procedure through which they can obtain appropriate degrees in military science.

I think that civilians (including the academic world) would welcome some way to recognize how much academic training in military science any given serviceman has had—in other words, to go back to my opening simile: identify the roses.

Civilian colleges ask no one's permission to issue degrees. These things are not fully covered by law. The colleges, within their own academic system, simply establish standards and grant degrees accordingly. These degrees are made valuable by what they represent in academic achievement. We can do this too.

Now, being retired and launching myself on a new career in writing (without benefit of high degrees), it seems to me I can promote the idea of degrees in military science—to be awarded by the only logical authorities to do it: our military colleges. I've seen the problem from all sides, have had it affect me personally, yet at this point have no ax to grind—so I can pound the drum without conflict of interest or inhibitions.

Military science is one of the most important and universally studied and respected of the arts and sciences in the whole galaxy of professional endeavor. It demands mental capacity of the highest order, and today it requires intensive study and education in an almost unbelievably complex yet integrated science: that of guided missile-jet-atomic-electronic-ideological-global war.

How, then, should academic recognition for education in military science be established? Here is one way:

● *Bachelor of Military Science* degree to be awarded by the Armed Forces Staff College. (This may mean little to those who already have a college degree—but it will give valuable recognition to a few outstanding *and highly educated* officers who have not previously received a college degree.)

Opportunities for Degrees—On and Off Campus

As General Newman writes, civilian colleges do not give advanced degrees in military science. However, a number of them do grant bachelor of science degrees in the military sciences. A report of the U. S. Department of Education issued a few years ago revealed that in 1955-56 some 416 bachelor degrees in military, naval or air science were awarded by 10 U. S. colleges and universities.

The University of Maryland and the Municipal University of Omaha are the recognized leaders in educating officers towards a bachelor's degree in a military science.

Brig. Gen. T. D. Stamps, Assistant Dean for Military Studies at the University of Maryland, reports that Maryland has granted more than 3,500 degrees in Military Science since 1946. At the present time about 500 officers are enrolled (on and off campus) each year with about half of them from the Army.

Under the so-called "Bootstrap" program for on-campus study, Maryland is enrolling about 200 officers, of which a little less than 100 are from the Army. Under this program an Army officer can study on campus for a full academic year plus a summer session and earn his in-residence credits.

The Municipal University of Omaha has a somewhat similar program and is presently enrolling 40 or more students under "Bootstrap." Dean C. W. Helmstadter of the College of Applied Arts reports that Army officers can qualify for a degree "with a minimum of 24 college hours, provided they have satisfactorily passed the GED tests and have service courses which are acceptable for credit."

Graduate Study

At the graduate level, the George Washington University is making it possible for students at the

• *Master Degree in Military Science* to be awarded by each of the three service war colleges (Army War College, Naval War College, Air University), and by the Industrial College of the Armed Forces and the National War College.

• *Doctor of Military Science* degree to be awarded by the National War College to officers on active duty, on their promotion to major general, U. S. Army (and to comparable grades in other services)—if they have previously graduated from one of the war colleges.

This last one may give you pause. However, I submit this is not only logical, but is a much stiffer requirement than the existing criteria in civil life. It includes the prerequisite of a Master degree in the military college system, and requires successful service (achievement) in the grade of general officer—measured by the most exacting standard: selection for competitive (best-qualified) promotion.

Of course we face here the natural result incident to any proposal of a radical change: discussion, question, and opposition. For example, why not have the Armed Forces Staff College award a Master's, based on what credit is given for the Command and General Staff College and lower level schools? And why not award the Ph.D. on promotion to brigadier general?

This could become quite a discussion, if we went into detail. To make these degrees worth something, however, they must be *hard to get!* If degrees are made easy, we will reduce their value —and thus negate what we set out to establish. The inherent value of a degree in military science —awarded within the military college system— must be *at least* equivalent in value to comparable degrees awarded by civilian colleges in other professional lines of endeavor.

I was born and raised on a college campus, and attended a civilian college for two years before going to West Point. My mother was the daughter of a college president and my father—himself the son of a college professor—spent his life as a college professor. This background, added to my military education and military career, has brought me in close and intimate contact with civilians with top academic degrees—and highly educated servicemen with no comparable degrees. Let me say without equivocation and with all the emphasis possible: there is no reason for servicemen to sell themselves short in the educational field—which they are doing until our military colleges issue comparable degrees in military science.

Why let an archaic hangover from the Middle Ages, when academic mental capacity and scientific training played relatively little part in war, still deny proper academic recognition to our military colleges and university? Of course, there will be some wailing by academic dogmatists. To survive, this proposal must stand the light of day in print, enlist the support of progressive fair-minded men, and overcome by its own merits the attacks always leveled at new ideas.

Make the standards high—and civilians as a whole will welcome this step forward. The services, however, must take the initiative. The overall academic and educational training is in being, up to the highest standards. All we need is the simple administrative paperwork to make it a matter of record.

National War College, the Industrial College of The Armed Forces and the Army War College to earn Master of Arts degrees in International Affairs. Typical of this program is the one at the Army War College where the War College curriculum has been assessed as being equivalent to 36 hours of graduate study. The program developed by the University augments the USAWC curriculum by providing instruction in certain additional academic disciplines with instructors in residence on the USAWC campus.

The University requirement of thirty hours of graduate study for the degree is met by awarding nine credit hours for the War College curriculum and six credit hours for an accepted War College thesis. The remaining fifteen hours are acquired by attending off-duty, graduate seminars conducted by the University. One four-hour seminar is offered in each of the fall and spring semesters; one four-hour and one three-hour seminar in a summer session.

Authorized under the Army's General Educational Development Program, the hourly tuition cost for the program is $28.00 of which $7.50 is paid by the Government. Total cost per candidate is $515 of which $157.50 is paid by the Government; $357.50 by the candidate.

War College graduates remain eligible for the program for six years after graduation. Those who graduated during the six years prior to the program's inauguration are also eligible. Candidates for BA degree may apply work under this program toward that degree.

Approximately 130 members of the 1961-62 War College class are expected to participate in the program, 30 of which will have already acquired at least eight credit hours of study toward the degree through on-campus enrollment at GWU.

Approximately 70 USAWC graduates are enrolled in the GWU program on-campus in Washington, D. C.

LIAISON

Is it an art or science?

Lt. Colonel JAMES W. KERR

LIAISON officers may be the key to the survival of large units on the nuclear battlefield. We accept the possibility—nay, the probability—of all forms of communications jamming by the enemy; hence personal contact is all we will have left. When that fails, when all messenger or liaison movement becomes impossible, our war will be over. So you might say that the liaison business is just now coming into its own. We will need a large corps of ambassadors to coordinate and cooperate with high and low joint, combined, specialized, general, technical, line, international, and national units.

It is fashionable to describe one's calling as being both art and science. Even FM 101-5 attests this ambivalence. It says that the duties of liaison personnel are "to maintain continuity in the exchange of information" (science), and "to promote cooperation and coordination of effort by personal contact" (art). The manual gives more space to liaison than to G5 and many renowned special staff officers, with two columns on the science and two and a half lines on the art. To compensate for this unbalance, we'll discuss the art, and only briefly summarize the work or science.

Before leaving his parent unit the liaison officer must acquaint himself completely about his own unit and the specific purpose of his liaison effort. Once on the scene, he must be formally recognized by the visited unit, which he keeps informed of his own unit's status, at the same time informing his own outfit regarding the unit visited. The parent unit must furnish its liaison officer with the means to do his job adequately.

The liaison officer never leaves either unit without informing its commander or its staff. He never interferes with the operations of the visited unit. He must keep acurate records. Specialized liaison officers (for example, special weapons, special forces) must also function within this frame.

There are the bare bones. Any plodder can do these simple tasks—which is why often commanders assign liaison work to any plodder they find handy. Deep thought is given to selection only when specialized qualifications are essential; then we often face a lack of balance in the officer's capabilities.

In general, liaison officers are treated more kindly at the visited unit than they are at home (where they are better known?); but at either end of their beat they are likely to be regarded as stepchildren.

Now to the art. FM 101-5 says, "Liaison is improved by contact, experience, and by establishing working relations with individuals in the visited command." Let's expand on this eminent truism. What I shall say applies most specifically to long-term, resident-type liaison, but we can draw many applications to all forms and levels of liaison.

Success depends upon the visited unit's realization of the desirability of instituting or continuing a liaison effort. The LO must learn to see himself as his hosts see him. After all, his work involves reporting back on them. If they come to regard him merely as an official spy, his usefulness ceases.

Much of his usefulness depends on personality and energy. In the international field, language qualification is essential. Fluency is desirable, but if all you know is "Good morning!" then say it—enthusiastically and frequently. The LO must be not merely a welcome visitor to every officer; he must be sought out as a counselor and a companion, both on and off duty. As one old hand put it, "We get paid for going to cocktail parties." Which is true. No liaison officer has the privilege of declining social invitations. For these activities he gets no compensating time off (nor dare he be too attentive to the punchbowl).

One great danger besets the successful liaison officer: If not careful, eventually he begins to identify himself with the host unit, becoming its partisan rather than a catalyst for cooperation. When that happens he must be replaced.

I can illustrate these educational points from personal experience, which shows the challenges

and the satisfactions of well-planned liaison work vigorously carried out at international levels.

The background is the U. S. liaison mission to the French forces in Germany, of which I was deputy chief. As the only U. S. officer within a radius of 70 miles, and 130 miles from parent headquarters at Heidelberg, I had ample—perhaps unique—opportunity to live and practice the principles of liaison I have outlined.

My station was Freiburg-im-Breisgau, about equidistant from Colmar in France and Basel in Switzerland. The location and the nature of the job made it almost essential that the incumbent be fluent in French and German. Other qualifications can best be illustrated by relating one day's work—an unusually long and variegated day, but a most instructive one.

At 0130 my quarters phone rang. It was an Elvis (you know who) fan club in the States. Elvis had arrived in Germany that day, I was told, and could they please speak to him? Mysterious? Not at all! We were constantly called on to sort out messes based on American confusion of Freiburg with Friedberg (Elvis was at the latter spot). I had long since clued in all local German civilian and French military telephone operators to pass any mysterious calls to me. As a result, the fan club got me instead of Elvis. Poor kids!

The phone rang again at 0315: another fan club.

It rang again at 0530. The German railway police had on their hands three sergeants of another NATO nation. They had been drinking on the train, had missed their stop, and as a favor had been put off at Freiburg to avoid complications at the Swiss border. They were then engaged in demolishing the station. No more sleep that night.

At 0800 I helped a touring U. S. officer and family, which made me late for an appointment with the French chief of staff. Returning to my office, I found the sacristan of the local cathedral waiting. Someone had deposited military payment certificates in the poorbox. Would I please change them to Deutschmarks? I would, after he proved he was what he claimed, thereby laying myself open to federal prosecution, all in a good cause.

After fighting through four switchboards, only one of them American, I called Heidelberg about a special-weapons training program I was running for the French. After a lengthy conversation I found a retired Air Force officer waiting. He planned on spending a few months at a nearby resort. Would we please do his cigarette shopping and other errands during our weekly courier runs to a U. S. post?

The afternoon was relatively quiet: only a couple of U. S. coed tourists. They were broke and wanted jobs in my office so they could earn return fare.

I don't think I need labor the point by analyzing all the possibilities, all in one day, for applying sound principles of liaison or diplomacy, or both. I'll just say that in relations with French and German authorities we all strove greatly to make life easier and our task simpler. We did it by studying not only language, but history, culture, and local customs.

Naturally, not all our efforts could be in the limelight, nor was every action an unqualified success. However, relationships were cultivated on the basis of a we-are-here-to-serve attitude, which generated the maximum of cooperation from our French hosts.

Here are a few projects that illustrate the more routine aspects of our liaison activities: Briefing U. S. generals on French plans, and the reverse. Serving as quasi-simultaneous translator for mutual briefings and high-level meetings. Translating key sections of U. S. operations orders or field manuals sent to French units, often delivering them ourselves. Of course, we did the same when we brought French documents to Heidelberg. Teaching regular classes the French equivalents of troop information and education, officers' call, and regular training courses. Setting up the aforementioned exchange program, whereby selected U. S. and French officers were traded on a PCS basis for one year, and to small units for shorter periods. Representing the U. S. in protocol at French maneuvers and on formal occasions. Facilitating the transfer and employment of materiel, as when French Honest John outfits were first organized.

These activities bore more or less directly on promoting cooperation and coordination between French and Americans. Major limitations on our effectiveness were attributable to lack of funds to support our operations; often what logistical back-up we received was rendered grudgingly. Our reception by the French varied from close-mouthed (the Suez crisis was on) to enthusiastic. On several occasions they went so far as to place French units or detachments under actual command of various liaison or exchange officers.

All this merely serves to paint a background of successful liaison work against which to evaluate some of the principles listed earlier. We can see that the "science" part of it was taken care of by our parent headquarters. Linguists were placed in the liaison slots. Proper missions were assigned liaison personnel who functioned in a reasonable working atmosphere. Liaison units were furnished adequate materiel—adequate, albeit not luxurious—but a station allowance would have been appropriate, along with a big entertainment budget. It was up to us to apply the "art."

ARMY cerebrations

NOONTIME BULGE. *Why do we serve troops their largest and heaviest meal at noon?*

By Maj. CHARLES L. PECKHAM

Many enterprises preserve an operation simply because "it has always been the practice." In one respect the U. S. Army is no exception.

Why do we still serve troops their largest and heaviest meal at noon, even though the underlying reason for establishing this habit has long been eliminated? In case you don't know the reason for our practice, I'll tell you.

It began years ago down on the farm, where the workday had to begin between 0400 and 0500 in order to complete all required chores. Besides providing extra nourishment for farmhands at a time when their energy was beginning to wane, the practice of serving the heaviest meal at noon helped compensate for the lack of refrigeration. Food left over from the noon meal could be served again at supper on the same day.

Nowadays, a heavy percentage of our troops serves in garrison or service type units. By the nature of their work, these troops do not have to greatly exert themselves physically. Besides, there are many other soldiers who eat only the noon meal at a mess because the same amount of food is cheaper there than at most post exchange snack bars and restaurants. Yet the practice remains of serving a large, heavy noon meal. This creates a predicament so far as reduced efficiency for all is concerned. For older men it creates an added weight-control problem.

As a solution I propose that when a large noon meal is considered necessary for troops in the field, issue them a different type of ration.

WAR IS WAR. *And all of the talk about the soldier being extinct comes from people who try to make a simple thing complex*

By Maj. HARRY W. FRENCH

Since I've lost a little hair and will be pushing forty sooner than I want to, I take time to rebut Lieutenant Liell's theme in "Goodbye, Old Soldier," in the May issue.

When I was commanding units during one of the old wars of 1950-51, and during garrison training, and back in the days when everyone's favorite gripe was "You can't run your own outfit these days," I learned that one of the main reasons why a person couldn't run his own outfit was that he didn't try. These people would think of something to do, and instead of taking a calculated risk (will I be right or wrong?) they talked the matter over with their superiors first. I always found that the average officer, when commanding, can do pretty much as he wants, but so many worry about having a perfect score for being right. Not wanting to risk a chewing-out now and then, they first seek the advice of a superior. Naturally this puts the decision up to the superior. Getting into a little clean trouble now and then never hurts, and sort of makes life more interesting. Face it: you can't win 'em all.

As for tactics and this nuclear war no one knows much about, let's study tactics of the future, but first look back a moment. Have tactics changed so much since killing became the mission of the infantry? That was long ago. Isn't that still the job of the doughboy—whether he does it with 'a club or an H-bomb? His mission hasn't changed. The things that change are his weapons and the method of transporting him from one point to another. How he got to point A, whether he started as paratrooper, ranger, armored infantryman, guerrilla, commando, straight-leg doughboy—even marine—doesn't change his basic job. The principles of war don't change, and that is why they were conceived by some real Old Soldiers.

The Civil War leader used a horse to get around. Today we have trucks, armored personnel carriers, cars, airplanes and helicopters. Some even walk. One thing that will not change, besides the rain, cold, mud and sweat, is the fact that when the infantryman reaches point A and starts fighting, he becomes productive; while riding or marching he is merely in the process of being moved.

To me there are four things a unit can do: attack, defend, move, or be in reserve waiting to do one of the first three. We really haven't changed any of the four but merely applied variations, and given them fancy names.

Nuclear weapons are merely another form of supporting fire to apply at the right place and at the right time, where the fighting man wants it. We have progressed from rocks to mass-destruction weapons, true. But the principle remains the same: supporting fire for the ground soldier.

You will find that these Old Soldiers give pretty good advice, and I have learned from them. I remember one training period when everyone griped about camouflage nets because they were much trouble to carry. One day my battalion commander asked, "Have you ever fought an enemy who had air superiority, as I did in North Africa?" That made all of

us see the light. A small sample of what we can learn from the Old Soldier.

How about the vast store of leadership experience among our officers and noncommissioned officers still in active service since those antiquated wars? Their experiences may never get into print, but can be passed on through conversation and example. I learned more about leadership during General Mark Clark's address to an Infantry officers' graduating class than I did during the whole school course. The things such an Old Soldier could and does pass on are priceless. Another Old Soldier, a major I met in a hospital in Japan, taught me something that's worth passing on. "You know what I like about the Infantry? So long as you wear crossed muskets, you never have to look up to any other soldier." Simple words taught a simple lesson in pride. It's fine to see combat leadership demonstrated on a TV screen, but I wouldn't substitute such methods for the real thing.

Only recently an Old Soldier of the foreign army I was with told me: "War is simple. It becomes complex only when people make it that way." This Old Soldier was fighting guerrillas who probably don't know the first thing about the effective dosage of a nuclear weapon, but are experts at killing with old pistols, bolt-action rifles, and even sometimes crossbows. *He* doesn't worry whether or not a three-day pass includes a weekend.

THE PLASTIC POT. *A headgear of many guises, but making like it's a steel helmet isn't being very bright*

By CWO JOHN P. CONLON

Before 1941 we got along with a one-piece helmet. Then people at Benning worked up a new one with a detachable liner. I recall that in 1942 we had to wear these liners as sun helmets in the Mojave Desert. You couldn't wear them in town, where the garrison cap was the thing, even though it gave no shade.

Time marched on and so did we. The close of the war found us wearing liners in town, probably as a means of impressing on the Germans what martial folk we were at heart.

Isn't it about time to lay to rest this vestige of the great George S. Patton? After all, we have named some modern tanks after him.

The plastic pot is often prescribed as a field hat in lieu of the M1 helmet, and many and odd are its guises. One division has them brightly varnished and bearing unit coat-of-arms and division insignia, plus rank and name. Another has plain OD ones with no rank except for officers. So it goes. But a change of command may mean redoing as many as ten thousand liners. That time, when devoted to colorless things like military training, might be good for a bit, and the cash invested on art work could be used elsewhere.

Can't we have a rule throughout the Army that the helmet be worn complete or not at all? There is nothing like a steel helmet when you need it; but when you don't need it, it's only a burden. Simulating a steel helmet is being not too bright.

In the course of my business I often wear a bakelite hard hat. While it is heavy, I am comforted in knowing that falling slivers of glass can't comb my scanty hair. I have also noted that some of my fellow workers who favor wearing dress caps run like hell for their buckets when trouble starts. Sometimes this left me holding the fort alone. I don't wear it as a dress cap, or to look fancy.

The M1 helmet is a good piece, but why try to play soldier? I note that our habit has spread. News pictures showed Tunisian soldiers at Bizerte wearing the liners as helmets. Liners are about ten per cent better than the magic charms of the Indian Ghost Dancers, if that much.

When the stuff is flying, we should dress appropriately. When it isn't, let's do our work in more comfort. I have seen a lot of prettied-up soldiers who were not worth a damn for work. Conversely, the dirtiest I have ever seen were infantrymen of the 4th Infantry Division getting on the road in Normandy. They had been fighting, they were going to fight some more, and they were not impressing the enemy with shiny helmet liners. The only clean things about them were their weapons.

ASSEMBLY AREAS. *In selecting them consider first their potentialities for defense*

By Col. HENRY E. KELLY

The assembly area has always been important, serving primarily as a position in readiness that favors command control, staff planning, and final preparations of troops for combat. It was so located as to facilitate concealment as well as timely entry into combat.

In the attack it was usually placed well forward, convenient to the anticipated area of commitment. In defense, the ideal sought was a central position in point of time to the several potential missions of the reserve.

In striving to balance the competitive characteristics, units were often located in low wooded ground poorly suited to defensive combat. Preparation for combat was usually limited to defense against air and armor attack, and local security. Field fortification, if undertaken at all, rarely exceeded the shallow, prone, skirmisher's trench. Sometimes, efforts to simplify control and to obtain obvious concealment resulted in congestion that drew hostile fire. Entry into combat often was delayed by difficulty in leaving wooded areas that offered limited opportunities for deployment.

Thus, while the ideal assembly area should facilitate

control and concealment in a convenient location, practice often resulted in undue concentration, poor defensive possibilities, and loss of time in moving out after orders finally arrived.

What of the future? Recently published doctrine still utilizes the assembly area as well as what are called "dispersal areas." In both, "troops must be dispersed to the maximum extent practicable to reduce nuclear vulnerability." We are told that when we are attacking such areas will be occupied for a "minimum of time," that "troops will remain dispersed until the last possible moment prior to crossing the line of departure," and that "once the mission has been completed the elements separate immediately." In defense, the striking force is to be placed either in dispersed assembly areas or in blocking positions in the area of the striking force. From the viewpoint of terrain, this assumes that a blocking position is only a more or less completely organized defensive position blocking a route of approach.

So it seems that except when actually on the move, troops in combat will always be placed in dispersed areas or positions variously termed assembly, dispersal, blocking, or defensive. Questions arise as to the specific characteristics of each type, and how and to what extent they differ. The demands of dispersal and mobility in nuclear warfare seem to act as a common denominator which will result in a basic similarity among all four. All must facilitate defense against both ground and air attacks as well as furnish reasonable protection against destruction by nuclear and CBR attack. Also, it seems a waste of effort to occupy and improve an area that is unsuitable for defense, as we have often done in the past. Hence, depending upon its location, an area selected primarily for its defensibility might well serve for any of the four purposes. In any instance, such an area would be improved to the extent permitted by time and the situation.

The need for dispersion complicates the normal activities carried on in the assembly and dispersal areas. Assuming that the extent of dispersion required in a defensive position is adequate for an assembly area, these functions could be carried on, particularly if smoothly executed SOPs are used to simplify control. However, in the event dispersion is overdone, many of the activities normally carried on in the assembly area will be seriously handicapped.

The wide-open nature of future battle and the mobility of forces will magnify the importance of all-around defense of all such areas, regardless of their location. The threat of nuclear attack makes the shallow skirmisher's trench practically useless. This necessitates use of the deeper foxhole, both in the dispersed and defensive areas. In every instance increased importance will be placed on the tactical siting of foxholes and the use of obstacles and mines.

Current doctrine contemplates that assembly and dispersal areas will be occupied for the minimum period. However, since units must halt somewhere, we will frequently have to choose between improving an occupied area or moving to another dispersed area. When faced with such a decision, we must weigh the relative desirability of two areas and the chances of remaining undetected in the occupied area. When an area is occupied for so short a period that it cannot be improved, we must decide whether to broaden dispersion to the point that endangers control and readiness for combat.

In such circumstances it seems logical that the type of terrain suitable for a defense area is also best suited for a blocking position, or an assembly or dispersal area. If this is true, improvement of all such areas will proceed along similar lines, subject of course to the pressures of time and conflicting missions. Thus, in assembly or dispersal areas the necessity for control, reconnaissance and administrative measures may slow the preparations for defense and individual protection, the priorities in each instance varying with the demands of the situation.

I propose that the characteristics required for assembly areas, dispersed areas, blocking positions and defense areas be grouped about the common nucleus of the requirements of a defense area, with the least number of distinguishing features for each of the other areas. I think such an approach would greatly simplify the tasks of unit commanders and troop units who attempt to apply existing doctrine.

MOBILITY? *What are* you *talking about?*

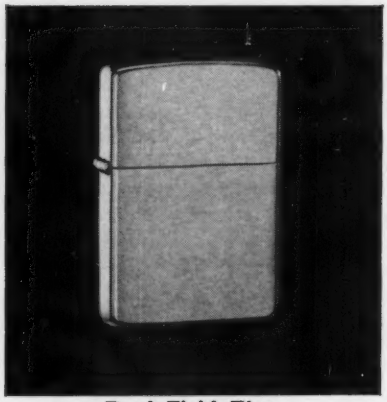
By Col. CHARLES D. Y. OSTROM, JR.

Is our title a foolish question? Partly yes, partly no. You can find fairly concise definitions of *mobility* in various dictionaries. We've all heard the triumvirates *firepower, mobility,* and *shock action,* and more recently *firepower, mobility,* and *command-communications.* Probably most of us still would agree that mobility means simply the ability to move or be moved readily. In the January 1961 issue of ARMY, General Bruce C. Clarke further modifies this definition: that controlled movement capability which permits the full use and exploitation of combat power to achieve an objective.

But now let me ask, "What is the mobility of a STRAC medium tank battalion equipped with the M48A2?" How many pages does it take for the Army aviation proponent to agree with the logistician, and for the battalion commander to concur with both?

The hard fact is that mobility has not been reduced to quantitative terms. There is agreement neither on the qualitative factors which affect mobility nor on their order of priority. Studies begin in a cloud of implied assumptions and conclude on a plane where the experiences of the most persuasive (or most senior) have guided the discussion. Where else can a study start and where else can it go under existing conditions? The makers of the study can only use adjectives, and there is no commonly agreed-upon order among them. The result can very well point in the right direction; but is it halfway to, at the 90 per cent mark, or does it grope for that extremely expensive

Christmas shopping guide to Zippos...the lighters that work



Brush-Finish Zippo

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No matter how old it is, or what its condition, if a Zippo ever fails to work, we'll fix it free

Use this handy page to pick out the most appropriate lighter for each smoker on your gift list. Write each person's name in the space below the lighter.

Then clip out the page and take it to your PX or any store that sells Zippo lighters. Most good stores do.

Zippo Manufacturing Co., Bradford, Pennsylvania
Canada Limited, Niagara Falls, Ontario

High-Polish Zippo

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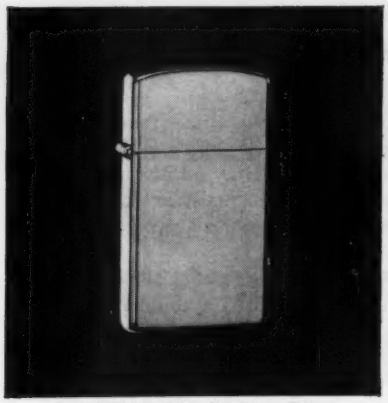

High-Polish Slim-Lighter Zippo

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Zippo Sports Lighter

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Ribbon Design Slim-Lighter Zippo

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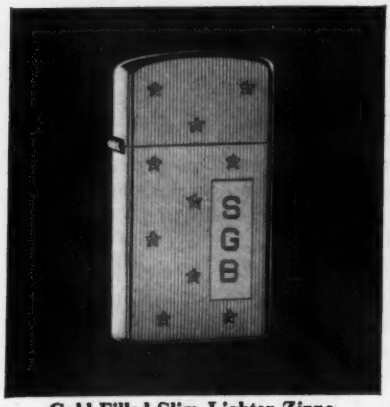

Gold-Filled Slim-Lighter Zippo

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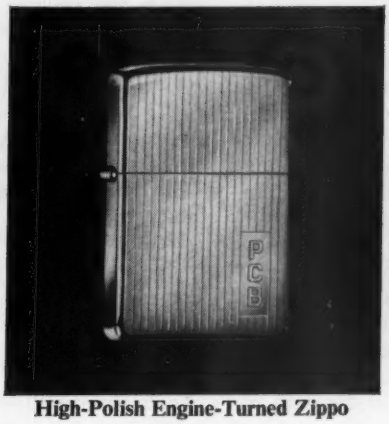

High-Polish Engine-Turned Zippo

NAME GOES HERE

ZIPPO—
THE LIGHTER THAT WORKS

goal—perfection? Or is intuition completely wrong?

By now you should have deduced that I am all for getting down to a lot of pick-and-shovel arithmetic, and favor an intensive study by the Army in order to identify those factors which affect mobility. After identifying the factors, we should give them orders of priority if numbers cannot be developed for them immediately. This sounds like a man-sized job. It is. It has been done for firepower, although the process has taken about 15 years to arrive at its present state of effectiveness. Some bounds must be placed on mobility if engineering use is to be made of the term. These bounds will not be too restrictive if we draw analogies from firepower. Radars and communication links loom large in the analysis of effectiveness of the Nike air defense systems. Target system analysis has a major impact on the choice of a family of guns and rockets for ground combat support.

A little more of the reason for such irksome detailed activity is probably in order. Two other terms are heard a lot these days: "austerity" and "logistical requirements." Their implications are many and varied. Certainly the Army needs to make the most of limited means at every step, from research and development through combat employment; and the devil of logistics besets us at every step along the way. Both terms imply costs, and costs are best computed by numbers. If you haven't got the numbers to use, then you fall back on "which do you prefer?"—that is, priorities. In return for the price you pay you get benefits or effectiveness.

Again, the best method of comparison is by using numbers; the second-best way is by comparison against priorities. Valid comparisons between systems can be made only when there is order in the measurement of effectiveness and order in the statement of costs. The more dissimilar the systems, the greater the necessity for using numbers. Adjectives begin to have different connotations. The diversity in mobility systems is every bit as wide as the diversity in firepower systems. Thus, to recognize true austerity and to minimize logistical requirements, we need to get down to the hard tasks of generating numbers for, and listing the priorities of, the factors which comprise and affect mobility. Arriving at a conclusion through the process of synthetic reasoning has its place, but it is both sounder and more restful to have mathematical proof.

Having recommended the undertaking of a good-sized job, we should give some attention to the solution. It will not spring into being full-blown. If it were that easy, it would already be here. And mobility would not be the subject of so many papers, ranging from official material to personal opinion. The solution will come only from dedication to the task by one or more specific organizations, hard work by many outsiders in the support of the task, the gathering of bits and pieces of fact and ordered opinion until these gradually fit into larger and larger patterns, and patience and support of the whole effort for several years by the command chain. Only then will it be reasonable to expect a real output: quantitative statements of relative mobility.

The methods pursued in attacking the problem are not new or especially complicated. First, you have to break mobility into fragments that you can handle. Much has been said about strategic mobility versus tactical mobility, and sometimes logistical or administrative mobility is thrown in as a third variety. Even these bites are too large for a start and they may give the wrong twist to the study. What we want to compare are different pieces of equipment that do the same job.

In firepower, most comparisons concern several cannon, or a variety of cannon and missiles, or several missiles, against a set of military characteristics. The military characteristics themselves usually are rather precise in terms of desired performance, not in terms of design. Such statements can be made for materiel designed to move people and things. Define obstacle clearance capability, speed range, maneuverability, payload in terms of numbers, weight and cubic capacity, and a few more properties. Outline the missions to be performed; does it work in the rifle company or in movement behind the division's rear boundary? Now let the designers state their proposed solutions and begin comparing. Having the MC we just mentioned, a truck, a tracked vehicle, several varities of aircraft, and a ground effects machine could all meet most of the criteria. Now let's compare costs and choose.

How do you compute cost? The obvious answer is in dollars, but that has its problems. How far do you go? Do you stop at initial cost or do you go through fifth-echelon maintenance for the life of the article? Weight and operational and support requirements is another method. Men required for operating and supporting is a third. These may not give the same answers, but all are scarce commodities. And certainly all are reported in numbers. The keys to computing cost are a checklist to avoid overlooking points, and a lot of detailed research.

We already have checklists to guide us. For example, RAND Corporation has devoted a number of its publications to the construction of such lists. But remember this: you must be uniform and thorough, you must decide how far you are going in computing your cost. Recently an article in these pages said that an HU-1A helicopter can provide more ton-miles per combat-day than the 11 ¾-ton trucks normally can which are assigned to the supply-and-transportation platoon of an airborne battle group. Get rid of the trucks and save men, maybe gas, maybe dollars! But let me quote an extract from a year earlier:

"In replacing transportation truck units by cargo helicopter units in the field army, the basis of substitution is 3 H-34 helicopter battalions for 4 transportation truck battalions, because of a comparable capability to transport a given number of troops over a given distance in a given amount of time.

"However, trucks require one hour of maintenance for every 12 hours of operation. Helicopters, by contrast, require nine hours of maintenance for every hour of flight. For an equal time of operation, therefore, a helicopter requires more than 100 times as much maintenance as a truck. Thus, while the four truck battalions require only 108 maintenance personnel, the three helicopter battalions require a total of

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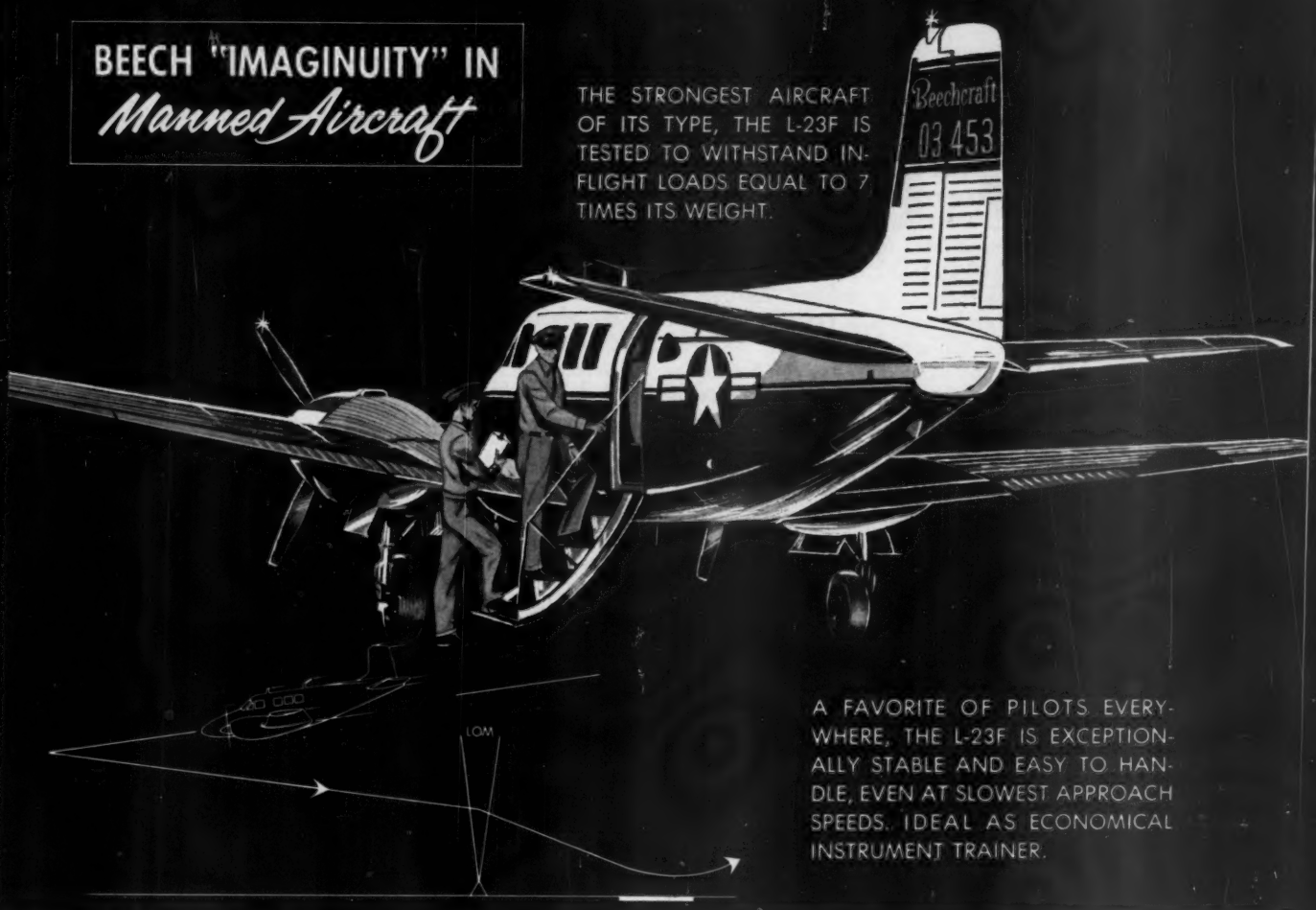

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The reliability of the L-23F has been proved by many thousands of hours of both service and civilian flying. With 340 hp Lycoming supercharged fuel injection engines, it can cruise over 190 knots at 70% power. Top speed is over 200 knots.

The L-23F can be produced in quantity to meet early delivery schedules.

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800. Furthermore, to train a helicopter mechanic to an acceptable level of skill requires three times as long as to train an acceptable truck mechanic."

Add that to the first, and what *are* the costs? It will take some study, but experience plus engineering estimates, work on tentative tables of organization, and the like, can produce numbers for almost every aspect of costs.

Effectiveness poses more of a problem. Earlier, we mentioned the writing of military characteristics in terms of performance. When you decided on the measures of performance you would specify, you decided on the several measures which combine to provide an over-all degree of effectiveness for mobility. This is not miles per hour (the number occasionally proposed as a measure), not ton-miles per man-day which was once suggested in these pages. That last is warmer but still seems a gross over-simplification.

What *is* the number? There isn't one now, which is the point of this discussion; and frankly, it is unlikely that there ever will be only one. But there can be an orderly and consistent arrangement of several units of equipment in terms of their relative effectiveness of performance against stated missions and military characteristics.

The ordering is easy when you are concerned with numbers, miles per hour, height of obstacle cleared, swimming capability, lift capability. Even vulnerability can be reduced to numbers. Some factors such as reliability, safety, and operator fatigue may not be so pliable, but the various equipments can be qualitatively ordered within each category. Then comes the melding process. How does the average of 15 miles per hour, three-foot obstacle clearance, good reliability, nine-foot silhouette, manual shift, and simple maintenance compare with 55 mph, 12-inch obstacle clearance, poor reliability, five-foot silhouette, automatic shift, and complex maintenance?

A series of articles in *Naval Research Logistics Quarterly* from September 1956 to March 1959 tell how the Bureau of Ships answered this problem exactly. These articles explain how ten different kinds of sets of electronic gear available for allocation in quantities ranging from one to 300 were distributed among a possible 1,000 ships, some of which carried up to 50 different kinds of sets of electronic gear. Qualitative differences were first ordered merely by ranking sets as to technical desirability. Then refinements were introduced by determining relative differences in effectiveness between sets. The numbers were actually obtained by asking preference-type questions of responsible and experienced Navy personnel concerned with pertinent aspects of the allocation problem: the Indians and chiefs who were involved in the staff study and approval action anyway.

The operations analysts took these answers, analyzed and ordered them, and then fed the resulting program into a computer. An allocation came forth. Intuitive (a staff study) and hand-calculated solutions were arrived at and compared with the complete machine solution based on the matrices determined by the questions. The machine solution correlated well with the intuitive solution. It also turned up gross errors in the hand-calculated solutions. So here you have purely qualitative differences handled uniformly and in an orderly manner, a more difficult problem than that posed a few paragraphs back.

But you merely verified the staff study, you say. Yes, but remember, not exactly. Correlation was good and gross errors were corrected which occurred in the hand-calculated spot checks. The staff study really verified the computer solution. It should, if it were a sound staff study. The input to the two was the same: the considered judgment of the same group of men. The pattern and detail of the computer solution were consistent; the staff study solution had some detail that was inconsistent with the over-all pattern. So there was a gain. Another gain is in the fact that the solution is much harder to argue with since it is subject to nit-picking only on the input facts and assumptions. After that, mathematics takes over. Maybe putting relative mobility into numbers is not too difficult after all, just as it is possible to compute cost.

The mobility expert now looks uncomfortably like a comptroller, a man who moves to a preconceived conclusion through the use of incomplete data applied to erroneous assumptions. There is no need for this. Costs can be computed. Some aspects of effectiveness can be reduced to numbers; the rest can be assigned priorities. Then comparisons can be made in orderly fashion. If nothing appears satisfactory, try some trade-offs. You can compute what you have to give up for what you stand to gain, and see how you like it in terms of the established patterns. Or you can even see what happens when you change the pattern. The initial assumptions aren't sacred although facts should be facts.

We are 20 years from World War II and 10 from Korea, which was fought with virtually the same armament and equipment. Since that time the possibility of nuclear fires has been added. New organizations are being introduced, new tactics are being proposed. As regards firepower, the new equipment to complement the present and near future has been decided upon. Some seems to have been introduced into communications. Mobility seems the worst hodgepodge.

Airplanes and helicopters, armored personnel carriers, the quarter-ton and 2½-ton with several axle arrangements, engines, and transmissions, the GOER vehicles, and the railroad are with us. It behooves us to find the place of each and see if some can't go. Maybe not.

In firepower the trend has been toward additions with a lesser number of deletions. And there are cost-effectiveness numbers to back up the trend. The Army is proliferating in means of locomotion too, but where and why? Armor waited for the railroad in World War II, and infantry did the same in Korea. Sherman was the last to cut loose from rail, and he marched to a port.

Let's get some agreed-upon nouns and adjectives for mobility, then numbers and priorities to show their limits. Look again at our title. No wonder mobility seems equated to Babel. When we become precise in speaking of mobility, we shall have taken a long step toward a truly MAXMAR (Maximum Mobile Army) in both the tactical and logistical senses.

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ARMY — irons in the fire

Doctrine Parallels Development

When the user is left out of developments misunderstanding results; SDs as a case history

By JULIAN HARTT

"You can pack a lot of guts in a drone!" When a general officer of the United States Army made that remark at a news conference recently, he was referring to a drone's ability to perform a surveillance mission where a manned aircraft could not go.

This is, however, but one of many present and future capabilities of surveillance drone systems.

Unfortunately, these capabilities are not widely understood. The absence of understanding appears to extend from users in the field to general officers who will participate, in the months ahead, in deciding perhaps whether the surveillance drone has a future.

In the five years since Radioplane Division of Northrop Corporation was asked to put a camera into a target drone and see what could be done with it, far too many still walk warily around the concept. They view it like the one strange, unidentified egg in the Army's surveillance systems incubator.

In my opinion, a major factor is a continuing lack of coordination with the end-user—armor, infantry and artillery—from the initiation of the drone concept.

By corollary, the combined arms-users developed an understandable degree of indifference when SD-1 units (actually, AN-USD1A systems) were delivered in the field, to U. S. Army, Europe, for instance, with incompletely trained crews, with inadequate advance indoctrination at army, corps or division levels.

This occurred primarily because doctrine had not been written. Only now, in fact, is it being written, after scores of millions have been spent on four follow-up SD programs, two of which already have been dropped after costly investment.

In other words, events are moving too slowly in one area, and too rapidly in another.

And to this writing, not even the SD-1 system has been put through a realistic test, a thorough operational analysis, to provide (1) a sound basis for the formulation of surveillance drone doctrine, or (2) to determine adequately its own low-cost growth potential. During the interim years, it will be the sole deployed representative of its growing family.

This undoubtedly seems hypercritical. But let's look at the record.

Last December 25, in the Christmas Day issue of *The Los Angeles Examiner,* I examined the general situation in an article headlined: "Do Arms Experts Dream Too Much?" A small portion of that should be quoted in preface:

"In many cases, it seems the military services are prone to put their dollars — ours, really — into overly-sophisticated adventures for the imagined needs of a decade or more ahead, and fail to provide the tools for the present.

"With apologies in advance to the Army for singling out one of its projects, we would like to make our point through the surveillance drone program. . . ."

The drone program

That was followed by a survey of the various programs which, with one notable exception, were in much the same position six months later. In gist:

SD-1—Costing approximately $18 million, this included all research and development, testing and delivery of 25 complete SD-1 systems now operational—10 in Europe, three in the Pacific theater, and the remainder in the United States.

SD-2—Designed as the successor to SD-1—has already cost approximately the same. Only recently has the SD-2 been accomplishing a fair percentage of successful flights and these are under ideal conditions with full contractor support. The slippages make it realistic to estimate at least two years to any operational deliveries. How many then? The cost factor may limit them, since the SD-2 "bird" itself will cost up to possibly five times as much as the $8,500 SD-1 drone.

SD-3—Alternate to the SD-2 in providing a successor to the SD-1 as a "division level" surveillance system—has been dropped.

SD-4—Planned as a longer range surveillance drone, even more sophisticated—this program also was dropped.

(That is the "notable exception" referred to above. It had not been cancelled last Christmas when I wrote the story for my newspaper.)

SD-5 — Under development by Fairchild—calls for a range of 300 miles. Its weight has multiplied over those of the other programs to that of a couple of automobiles. Weight means money in flying machines.

That leaves the SD-1 as the operational system for the immediate years ahead which President Kennedy has emphasized as carrying a relatively increasing threat of conventional war.

How good, then, is it? The answer is: Not as good as it could be. In fact, lacking a "secure" control system, it could be said that it is little more than a training vehicle.

However, a jam-proof, interference-proof control system is availble. It was developed by Radioplane from the firm's own funds, and could be installed at approximately $3,000 per unit, according to company sources. This compares with "secure" systems for the more sophisticated follow-on systems

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TOP PHOTO: FULL SCALE DEVELOPMENT MOCKUP

running as high as an estimated $20,000.

More important to the future, however, is avoidance of the lack of coordination apparent in the past, so the true role of the surveillance drone can be assessed. What is needed and wanted must be determined. Then a system to fill that bill can be built. Efficient steps can be taken to make SD-1 fill the gap until the new system is ready.

To be fair to all viewpoints, it should be noted that a realistic test program and operational analysis —combining users and technical people, perhaps requiring several months to complete—quite possibly might result in total elimination of the drone as a surveillance tool.

Origins of the drone concept

Whatever the result, the need for such a coordinated program appears most evident in the seeming confusion of the pitfall-pocked past. To the end that these same conflicts neither be repeated nor compounded, let us review the history of the drone surveillance concept as I have found it from conversations with many Army sources during a tour of USAREUR.

Origins are difficult to trace, but certainly one of the moving figures was Colonel Sam Webster, who had been toying with the idea of using drones as a surveillance device since the end of World War II. His thoughts were channeled up through the Combat Surveillance and Avionics Department at Fort Huachuca, the electronic proving grounds in Arizona, some five years ago.

Radioplane was the logical company. It had been building the OQ-19 target drones—all services and many other countries bought them by the thousands—for several years. The Signal Corps approached them with a proposition: Could they mount a camera on an OQ-19 to get some idea of what it could do?

That first effort was utter simplicity, and this is a point to remember. They simply "hacked a hole in the wing" of a OQ-19, "stuck a camera in it" and then took it up to Camp Irwin, in California's Mojave Desert, for an "out-of-town tryout."

A tactical situation was simulated. There was an aggressor. He had some armor and some infantry. And they moved around.

The anti-aggressor outfit had nothing but the OQ-19 and its camera, for gathering intelligence of the aggressor movements.

It proved reasonably successful and the SD-1 program was born.

Unfortunately, however, that was the most realistic and objective analysis of a surveillance drone's capabilities, with user-troops involved, to be conducted in the next several years.

The Signal Corps set up a semi-autonomous organization, the Combat Surveillance Agency (CSA), reporting directly to the Chief Signal Officer. There was no question of enthusiasm for the SD concept, both in the Signal Corps and at Department of the Army levels. But the modification piled upon modification came almost entirely from the technical side of the house. Naturally, many were good. Others, in the opinion of engineers long experienced in drone systems, were additions only to complexity and cost.

There was a tremendous insistence upon reliability in the drone itself, squeezing for the last possible percentage when quite likely the reliability of the target type OQ-19—some 80 per cent—plus a small increase would have been sufficient.

As a corollary, a review of the SD-1 history indicates lack of concern with a more important reliability factor, that of training personnel—from maintenance troops to the officers who would employ the SD-1; from philosophy and indoctrination through the attitude of the people who would employ it.

Lack of doctrine and training

Thus, as the simplicity which the builders hoped to retain in the system gradually slipped away, a new problem was growing in the gap between the technical side—already thinking ahead to the follow-up

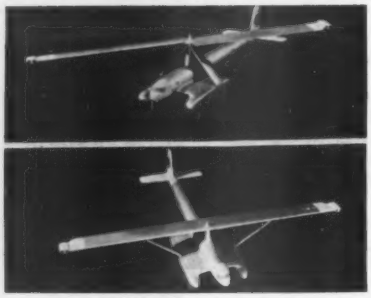
Hiller Proposes Converticrane

A giant flying crane helicopter which would convert its huge rotors into wings for high speed, long-range airplane flight has been proposed by Hiller Aircraft Corp.

The military has long liked the usefulness of large crane helicopters, but among the problems which hampered their development were mechanical complexity, and the inability of moving these bulky machines quickly into a theater of operations. Hiller believes it has conceived in one design an answer to both limitations. The flying crane, called the "STORC" (Self-ferrying Trans-Ocean Rotary-wing Crane), would be lifted by rotors powered by turbo-jet engines located at the blade tips, thus eliminating heavy and complex shafts and gears required in conventional helicopters.

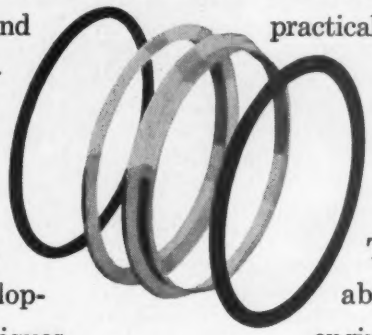
To assume its airplane configuration, the STORC would land, and one of the two rotor blades would be rotated in its hub. Both blades would then be locked in position as a conventional airplane wing. Engines in the "wing" tips would now be thrusting in the same direction for high speed forward flight.

The conversion procedure would not take place while the aircraft is in flight. Hiller said the STORC was essentially a crane helicopter which could be ferried long distances—overseas—but that it was not a convertiplane.



Hiller proposed a STORC design of 30 tons gross weight, powered by four turbojets (two in each rotor-wing tip), with a wing span and rotor diameter of 120 feet. An existing jet engine of proper size, the Continental J69, can be readily adapted to this application.

Problem: Sealing of heavy-vehicle track components. *Needed:* A seal to keep lubricant in, dirt, sand, grit and water out. *Produced:* A metal-to-metal, floating ring seal by Caterpillar. The result of basic research in metals, rubber compounds, and lubricants—plus development of new tooling techniques.



This advance in sealing design permits use of more effective lubricants and eliminates expensive day-to-day maintenance.

Such developments as this typify Caterpillar capabilities in producing sound, practical solutions for mobility needs.

As a leading producer of heavy equipment, Caterpillar has outstanding resources in research, engineering and manufacturing. This experience and talent are available to you to meet your vehicle, engine, or component requirements.

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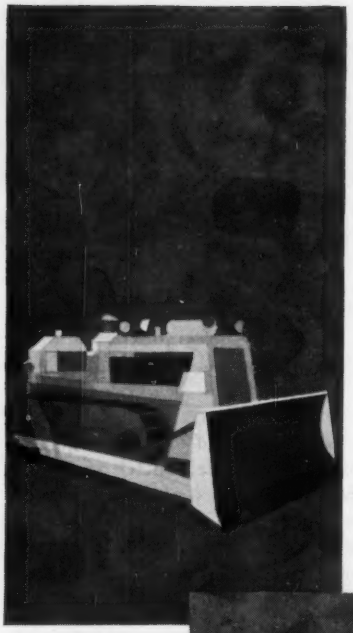
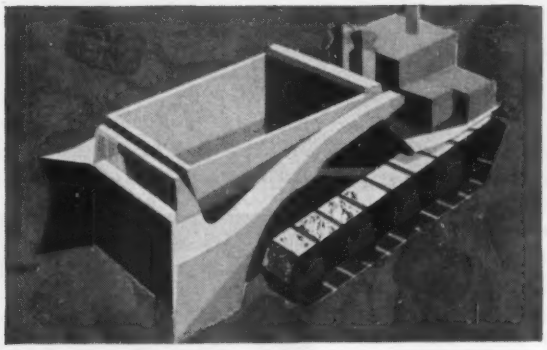
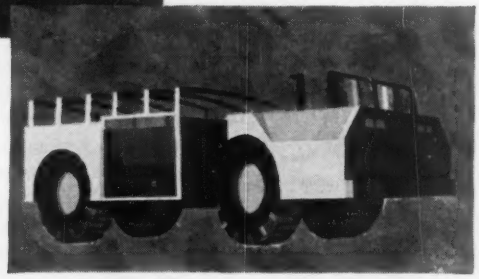


Air-droppable Tractor Bulldozer



Universal Engineer Construction Machine (under development)

8-ton GOER (under development)



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SD-2, 3, 4 and 5 concepts—and the users.

The time came for the Aviation Board to test the SD-1, which was done at Fort Rucker, Alabama. Since there had been a minimum of consultation with the user side of the house as to what would go into the system, what it should accomplish, what sensors should be considered, the attitude was skeptical, to say the least. As far as I can learn, the test also was quite unrealistic, consisting chiefly in flying the drone.

As a result, the recommendation was that the system not be adopted. Continental Army Command, equally prone to skepticism for the same reasons, concurred. But the Department of the Army overruled the recommendation; and, after further testing at Fort Huachuca, the SD-1 system went into production.

Meanwhile, however, there still was no real indoctrination of users, such as USAREUR. Nor was there established a real training program so that the first SD-1 systems would go to Europe as a "package deal" of system and trained manpower together, such as was done with the Corporal and Hawk missile systems.

Combat Surveillance Agency did send a small team to Europe for the purpose of indoctrination prior to shipment of the first SD-1 units. Unfortunately, they themselves were not sufficiently indoctrinated to accomplish their task. They had no doctrine to work from; and therefore, were unable to answer searching questions as to the capabilities—and for that matter, limitations—of the drones.

About the time the first units were to be shipped to Europe, it is understood that CONARC did send a lengthy directive to Seventh Army covering test and evaluation of all surveillance equipment. But at this time the only preparation Seventh Army had, in regard to the various ramifications of the drone system, was the CSA team's rather futile effort.

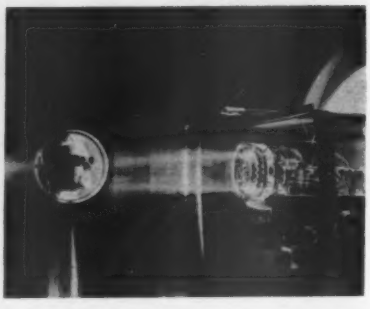
Similarly, to provide "trained" personnel, a number of men were taken from the target drone program in the United States and assigned to Europe. Again, unfortunately, a man oriented to the target concept is not particularly adapted to the reconnaissance concept. It is understood most of these men subsequently were reassigned in Europe; and thus, lost to both programs.

But, although SD-1s have been in the field for two years, it has, until very recently, been impossible to exercise or test them effectively in Europe. The training area at Grafenwohr, northeast of Nürnberg along the Czechoslovak border, simply is too restricted and too close to the Communist frontier for realistic test or training.

No full workout

The area assigned to the surveillance drones—due to air traffic control factors and other training—is so small that virtually all flying of them is "in sight" flying. Nor does any commander wish to let a drone wander over into the zone of the potential enemy and give grounds for an "incident." This prevents full exercise of the system, to "look around the next hill" and bring back pictures.

Last spring, a West German area up near the North Sea became available. But there is a serious question whether the experience—or lack of it—over two years makes it doubtful that doctrine can be developed by units now skeptical of the concept, in varying degrees.



The eerie glow of ionized atoms shooting out of this working ion engine is viewed by a technician through a porthole in a space simulation chamber at Hughes Aircraft Co.'s research laboratories. Developed by Hughes for NASA, the engine is the first of a family of such devices which company scientists say may be the ultimate form of propulsion for long trips into space. Although the thrust being tested here is less than a tenth of a pound, a cluster of larger engines operating on the same principle could propel heavy payloads—even manned missions.

It is understandable that officers can be found in the Seventh Army who will say: "We don't need it; we can use manned aircraft."

Nor is one surprised, in these circumstances, that some do not realize the drone can present a smaller, harder-to-hit target in areas where no manned aircraft would have a prayer of getting through.

Or that others do not understand still another capability: That groups or organizations detached from the division itself could take along their own aerial surveillance capability with them, in the form of a drone unit.

I observed in the Aviation Company classroom at Fulda a theoretical problem: "A line crosser reports several trucks at ——, moving south." The solution was to send a drone first; bring back pictures for a quick evaluation as a basis for further action.

But this was a classroom; there has been no place to exercise the system fully and, as mentioned earlier, SD-1 still remains virtually a training vehicle without the secure control system.

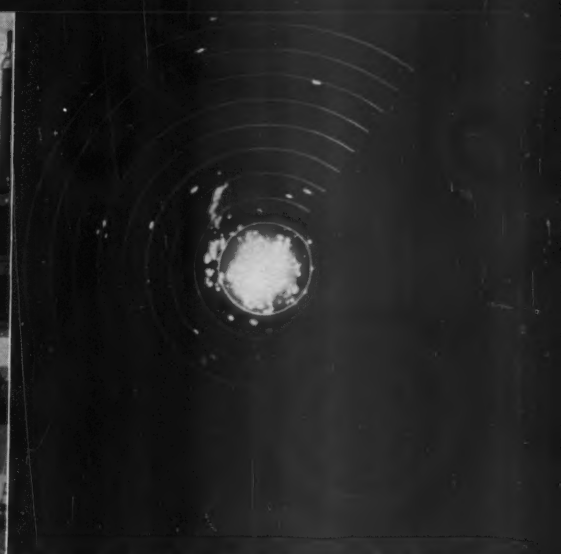
Neither is it intended to postulate that no one has experimented and exploited the SD-1. Reports from Hawaii, where one of the three units in the Pacific is stationed and where there is more room to move, indicate considerable imagination has been applied there, even to bomb shackles.

It is perhaps significant that the SD-1, now capable of day and night photography, was retrofitted in the field for the night capability.

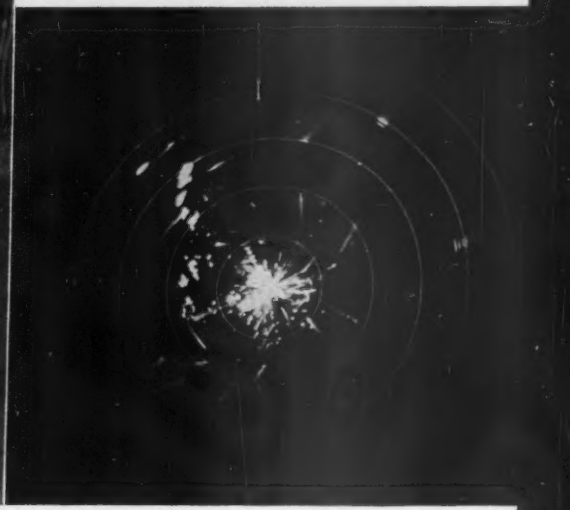
Other proposed missions include laying wire, dropping small amounts of critically needed medical supplies, messenger services and infra-red devices.

Radioplane sources feel that with a modest growth in the bird, SD-1 could accommodate sidelooking radar.

Regardless of industry opinion, however, and certainly much material herein has been gathered from such sources, and equally avoiding



Unretouched photos show conventional radar scope with single target display (above) and Raytheon bright display with continuous target tracking (below).



FAA orders new Raytheon bright display to further improve air traffic control

Raytheon's Radar Bright Display System, soon to be operational after three years of development, will mean safer transport for the flying public and greater traffic-handling capacity with existing control facilities. Features include —

SCAN CONVERTED DISPLAY

- ☐ Clearly visible under normal room lighting
- ☐ Target movements self-plotted in true position on map coordinates
- ☐ Adjustable memory, able to retain target signals for minutes
- ☐ Multiple location monitoring displays readily available
- ☐ TV-transmissible picture
- ☐ Instant image erase and rewrite within 2 seconds

POSITIVE AIRCRAFT IDENTIFICATION

- ☐ Sharp, bright flight tracks, displayed in real time
- ☐ Adaptable for identification symbols that lock-on and move with target
- ☐ Unmistakable hand-off assignments

RELIABLE PERFORMANCE

- ☐ Transistorized circuitry
- ☐ Light, compact, sturdy construction
- ☐ Low heat generation
- ☐ Simplified servicing

The Federal Aviation Agency has ordered 51 RBDE-5 equipments for control centers from Hawaii to the East Coast. Their advantages are available for radar, sonar, computer output and other display applications, to meet either Military specifications or the most exacting commercial requirements. For full technical details on Raytheon Scan Conversion Bright Display Systems, write: *Raytheon Company, Dept. 72 C, Lexington 73, Massachusetts, Attention: M. B. Curran*

RAYTHEON COMPANY

EQUIPMENT DIVISION

RAYTHEON

the sometimes violently conflicting opinions of military sources, several things seem clear to the reportorial observer on the "outside looking in."

The SD-1 system is in existence.

A great deal of money has been spent on research and development of far more sophisticated systems, two of which have been cancelled after considerable expenditure.

Those still on the books are a long way from operational reality.

Hence, the SD-1 is going to be the only system for some time to come.

Therefore, two actions seem obvious:

(1) Make every effort to exploit the SD-1—realizing it is not the solution to all problems, but can provide an effective interim tool in battlefield surveillance—to the fullest.

(2) Simultaneously join the technical agency and the users in a thorough, realistic test and analysis program, making sure that the monies spent in the future on surveillance drone systems will result in what the user wants and needs to carry out his mission effectively.

In conclusion, I would like to refer back to the final two paragraphs of the Christmas Day story in the *Examiner,* expressing the views of a civilian but more than casually interested observer:

"Again, let us apologize to the Army for seemingly singling it out. The same commentary applies to all services. And there certainly should be an intelligent measure of distant planning.

"But if 'the whistle blows' tomorrow, we are much more interested in what the troops have right now, not what they will have in 1975. If they are not ready, we don't have to worry about 1975."

Bell Soups Up HU-1

The Army's Transportation Research Command has awarded Bell Helicopter a $491,000 contract to perform experimental research on methods of obtaining increased productivity, range, and speed of helicopters. The HU-1 Iroquois helicopter is being used as a flight vehicle for this program.

The firm's engineers predict a modified HU-1 would fly at more than 180 miles per hour or about 60 miles per hour above Iroquois current cruising speed. Also forecast was an extension of the HU-1 range from 1,000 to approximately 1,400 miles. Bell engineers said the performance increases could be achieved by redesigning the rotor, adding horsepower and reducing drag. Experiments will be conducted with a three-bladed rotor and variable tilt pylon.

Make It Yourself Fresh Water

The Army has developed a gadget that will make enough fresh water to keep survivors of sea disasters from dying of thirst. Called the "sit still," it was developed by the Army Engineer Research and Development Laboratories and uses the heat from the sun's rays or from the body of an individual sitting on it.

It consists of a sheaf of five sheets about the size of standard typewriter paper. The five sheets are a black plastic film on top, piece of paper toweling or cloth, then a water repellant screen, a sheet of aluminum foil and a cloth backing for the foil. A sponge to collect the fresh water completes the kit.

The fresh water is made by condensation. The five sheets are dipped in the ocean, excess water is drained and the aluminum foil wiped dry. Reassembled with the plastic film on top, the sheaf is exposed to the heat of the sun, or, if it's a cloudy day or night, to the heat from the survivor's body sitting on it. The heat penetrates to the aluminum foil which is then cooled by the bottom salt-water soaked cloth.

In the cooling process, a condensation of fresh water forms on the foil. The survivor uses the sponge to soak up the water, which may be only a few drops, but enough to keep him alive. The efficiency can be increased by using additional sheets of toweling.

hot sparks

In environmental space chamber technician can make pressure adjustment on new plasma space engine described as the first operating self-contained electrical propulsion 'package.' Developed in the Plasma Propulsion Laboratory at Republic Aviation Corp., the engine is said to be capable of operating in space indefinitely on its own battery power. Its batteries are recharged by means of solar cells. The engine, compact and lightweight, is designed to meet practical requirements for space ship and satellite use. . . . **Ryan Aeronautical Co.** has been awarded a study contract for the design of towed logistics gliders capable of greatly expanding the cargo carrying capacity of Army aircraft. The flex wing principle (see ARMY, June 1961) will be used. Envisioned is a glider capable of carrying 10,000 pounds or more. . . . **Thompson-Ramo-Wooldridge** is to be the third supplier of M14 rifles. A contract for 100,000 rifles to be produced at Cleveland has been signed by the Army. Deliveries are to begin in 13 months. The M14 is presently being produced at Springfield Arsenal, by the Winchester-Western Division of Olin Mathieson at New Haven, and by Harrington and Richardson at Worcester. . . . **Vertol Division of Boeing** reports that the Army's HC-1B twin-turbine Chinook helicopter has successfully completed the initial hover phase of its flight test program. Twenty-eight Chinooks have been ordered by the Army. . . . **Research and development firings** of the U.S. Army's Sergeant ballistic missile system ended when all test objectives were met. Future firings will be conducted by Army troops and test personnel for proof of characteristics, to check the quality of production line missiles and to train Army combat units in use of the missile system. The Sergeant system is already in production at Sperry Utah Co., Salt Lake City, prime production contractor. . . . **The Davy Crockett** nuclear tank killer and bunker buster will soon be issued to troops in Europe. . . . **The Shillelagh** close support SSM missile is being advanced with more development funds provided Aeronutronics Division of Ford.

ARMY books

BUYING TIME IN KOREA

SOUTH TO THE NAKTONG, NORTH TO THE YALU. Lt. Col. Roy E. Appleman. Office of Chief of Military History. 813 Pages; Illustrated; Maps; Index; $10.00

Reviewed by

COL. JOHN T. CORLEY, who in Korea in 1950 commanded a battalion and a regiment of the 25th Infantry Division.

The first five months in Korea provide the basis for this first in a series of five volumes on the U.S. Army in the Korean War. This book differs in many respects from previous histories of the U.S. battle actions. It treats of the war at battalion level and often describes in detail, and with remarkable accuracy, actions by companies and sometimes platoons. It is essential reading for future battle commanders, and is interesting even to the civilian reader.

Colonel Appleman opens with a short background on Korea and the conditions existing there prior to the North Korean powerful offensive in the early morning hours of 25 June 1950. Although principally concerned with U.S. actions, he does not neglect the outstanding contribution of the ROK Army and other UN forces. It is encouraging to read about the actions of the ROK Army and its contribution to the over-all battle. By his selective treatment of certain small-unit actions the author gives the reader details not usually found in a book of this type. You become so interested in a particular unit that you want to follow it through to completion of the action. The author skillfully shifts from one part of the front to another so as to give a comprehensive picture of actions throughout. Easily accessible maps tie in one action with another.

Here is the story of how U.S. Army combat units, thrown piecemeal into battle to slow down Communist advances, fought a desperate and heroic delaying action, buying time until UN forces could attain the military strength necessary to take the offensive with the entrance into battle of X Corps at Inchon.

This volume brings the war to the UN offensive of 24 November. It leaves the details of the Chinese attack and the UN withdrawal from North Korea to a succeeding volume.

Most of the major command decisions in the early days are examined from many levels. Source references for key decisions are included in the story or are annotated on the same page. This serves to provide an unbiased picture of the defeats and successes of UN forces during the first five months. The author describes in detail the actions at Taejon preceding General Dean's capture. Official records on this action were scanty. By thorough research and interviewing participants the author gives an intimate picture of the action there. As he unfolds the story from one threatened front to another you gain an appreciation of the many problems facing General Walker, Eighth Army commander, whose versatility and ability to meet diverse situations and to shift almost nonexistent reserves to plug a threatening breakthrough establish him as a great leader and tactician. The over-all conduct of the war by General MacArthur is not neglected.

In a final chapter the author deals with the big question: the purpose and extent of Chinese intervention.

This history reflects a thorough job of research into available official records and first-hand accounts from private to general based on personal interviews, correspondence, and review by participants of early draft manuscripts of actions. Extensive use was made of captured enemy documents and reports of interrogation of prisoners of war. Some nine years have passed since Colonel Appleman started initial work on the early days of Korea. His detailed study of terrain is reflected in the clear-cut description of the battlefield which opens every account of battle. These descriptions, coupled with the maps and aerial photos liberally scattered throughout the book, enable the reader to closely follow the action and better appreciate the problems of the commander.

His use of statistics on strengths and losses places in proper perspective the myth of Communist hordes overwhelming understrength UN forces. By laborious research and cross-checking information the author recounts with remarkable accuracy the details of complex and often confused battle actions.

DEVELOPMENT OF STAFFS

THE MILITARY STAFF. Brig. Gen. J. D. Hittle. The Stackpole Company, 326 Pages; Index; $5.50

Reviewed by

MAJ. GEN. AUBREY S. NEWMAN, formerly Deputy Commandant, Armed Forces Staff College, later Chief of Staff, CONARC.

This excellent book's subtitle, "Its History and Development," states in four words how it examines the military staff. The survey begins with earlier origins of military staffs about 2000 B.C. and comes down to the present day—including the latest significant development in our Joint Chiefs of Staff system.

General Hittle (USMC, retired) has churned a tremendous amount of research milk to produce the rich butter he spreads on the pages of his massive staff study of staff development. Wisely, his opinions do not unduly intrude on the narrative, but do illuminate and point up facts and developments whose significance might otherwise pass unnoticed.

This summary makes interesting reading as it inquires into the organization and operation of military staffs in relation to the results of battles, campaigns, and wars from the days of Alexander the Great, Julius Caesar, and Gustavus Adolphus to Napoleon, Moltke, World War I and World War II.

Historical incidents and quota-

Selected Check List of the Month's Books

This is a run-down of some of the books we have recently received

COLDITZ: The German Side of the Story. Reinhold Eggers. W. W. Norton & Company. 190 Pages; Illustrated; Maps; Index; $3.95. The POW camp's security officer tells of outrageous attempted and successful escapes by the toughest and most slippery Allied prisoners of war.

THE COMPACT HISTORY OF THE UNITED STATES ARMY. Col. R. Ernest Dupuy. Hawthorn Books. 318 Pages; Illustrated; Index; $4.95. New and revised, to include comments on Korea and the future. Not strictly a narrative of military operations; rather a sociological study of the Army's development. How soldiers lived, what they thought and why; what they did to the Army and what it did to them. Reviewed in ARMY for January 1957.

THE HISTORY OF THE UNITED STATES FLAG. Milo M. Quaife, Melvin J. Weig & Roy E. Appleman. Harper & Brothers. 182 Pages; Illustrated; Index; $4.95. Regimental colors, naval pennants, mercantile flags, and the national (and Confederate) colors, from the Revolution to the present, wtih more than 50 color illustrations. Besides narrative, includes correct display, origin and development, seals, coats of arms, pledge of allegiance, and American's Creed. Top-notch work.

JOURNALS OF MAJOR ROBERT ROGERS. The Citadel Press. 171 Pages; $1.50. Frontier campaigning in the French and Indian wars by the organizer and commander of Rogers' Rangers.

THE NEW FRONTIERSMEN. Public Affairs Press. 254 Pages; Index; $4.50. Biographies of 313 Kennedy Administration officials: in the White House, in the President's office, in the Departments, and in miscellaneous offices.

PROLOGUE TO SUMTER. Philip Van Doren Stern, ed. Indiana University Press and Fawcett World Library. 576 Pages; Illustrated; Index; cloth $9.95, paper $.75. Beginnings of the Civil War, from John Brown's raid to Sumter, told through newspaper and magazine articles, eyewitness accounts, writings, letters, and statements and official reports.

THOSE 163 DAYS. John M. Gibson. Coward-McCann, Inc. 317 Pages; Illustrated; Maps; Index; $5.75. A Southerner's narrative of Sherman's campaigns from Atlanta to the Sea and north through the Carolinas. A popular narrative rather than a military study, and admittedly not always objective.

UNITED STATES ARMY IN WORLD WAR II. Master Index: Reader's Guide II. Compiled by Chief Historian, Office of Chief of Military History. 145 Pages; Index; $.75. Brief analyses of each volume so far published. The index refers to the lists of subjects and to indications of what matter is included in the descriptive sketches.

WELLINGTON AT WAR: 1794-1815. Antony Brett-James, ed. St. Martins Press. 338 Pages; Illustrated; Maps; Index; $10.00. Selected military letters and dispatches, linked by editorial comment so as to constitute a running narrative from 1769 to 1817. Thoroughly annotated.

tions enliven the book, yet each makes a sharp point. This one from Jomini is on the flyleaf: "A good staff has the advantage of being more lasting than the genius of a single man."

Through the book it is clear that while staff organization and procedures have developed and changed, human nature has not—as witness this quote from the memoirs of Count Blumenthal: "Headquarters was to me not an impressive experience. A crowd of long-faced loafers always is an odious sight, especially when they greet one in a sort of condescending manner, fancying themselves omniscient, and apportioning blame freely, in some cases neither knowing or understanding the circumstances."

One of many footnotes to history tells of friction between Berthier, Napoleon's chief of staff, and Jomini, Marshal Ney's chief of staff. Jomini finally resigned his position and went to Russia, where eventually he became General in Chief—and panned Berthier in his writings.

With reference to British staff development, a book by Spenser Wilkinson, *The Brain of an Army,* was the spark that both initiated and guided general staff development. Curiously enough, years later this same book influenced the U. S. general staff system.

General George Washington had his staff troubles too, which are covered factually and with interesting sidelights including this quote from Washington himself: "The appointment of generals is *important,* but those of the general staff *most important.*"

The author concludes that our staff system today is the equal, if not superior, to that of any nation. His work (this is the third edition, extensively revised) is well organized into chapters including one each on France, Germany, England, the United States, and Russia. The bibliography is comprehensive and the index is well done, but some of the chapter titles are confusing at first.

Every officer should read *The Military Staff.* All who aspire to general officer rank or high staff assignments would do well to have a copy to mark, annotate and keep for reference.

HIGHLIGHTS OF A CENTURY

HISTORY OF THE U. S. SIGNAL CORPS. The Editors of Army Times. G. P. Putnam's Sons. 102 Pages; Illustrated; $5.95.

Reviewed by

PAUL J. SCHEIPS, who is on the staff of the U. S. Army Signal Historical Office.

This "history" of the Signal Corps represents a limited investment of effort on the part of the authors. Highlights of a century of Signal Corps history are here, all right, and there is even a differentiation, with a minimum of confusion, between the U. S. Military Telegraph (not *Service,* as the authors call it) and the Signal Corps in the Civil War. There are, however, more errors than would creep into a careful work and there are literally dozens of topics that ought to receive attention, but that do not even get a nod.

The balloon used in Cuba in 1898 was not a Civil War balloon and there is evidence, which the authors ignore, that Strobing did not send the last message from Corregidor. The authors never give the official birthday of the Signal Corps (21 June 1860) and even fail to mention more than half of the Chief Signal officers—including O'Connell, the only lieutenant general the Corps has had. The account of the famous Allatoona signaling of 1864, which includes four pages of messages quoted from Brown's history (without credit) is disappointing. One of the more interesting accounts, that of aviator

Quentin Roosevelt, belongs more in a history of the AEF than of the Signal Corps.

The bibliography, which omits a dozen or more good works and important archival materials, is rather poor. Captions to some of the illustrations could be improved, while some illustrations are publicity releases—and look like it.

Clearly, no careful research went into this book, which will be of little value to anyone with more than a casual interest in the Signal Corps, whose century of varied activity in peace and war makes it deserve a far better narrative.

CAMG AT WORK

CIVIL AFFAIRS AND MILITARY GOVERNMENT: NORTH-WEST EUROPE, 1944-1946. F. S. V. Donnison. British Information Services. 518 Pages; Maps; Index; $7.85.

Reviewed by

COL. ELBRIDGE COLBY, who specialized in this topic at Charlottesville, and in England and Normandy.

The British official history of World War II, planned for 20-odd volumes, of which this is one, with four of them on military government, gives greater proportionate attention than this subject has ever received. I say this even though the subject is not as "largely unexplored" as the author seems to believe. Its literature is, however, mostly on the theory and the legal side and relatively fragmentary on the factual. The extent of this attention is therefore welcome. A former Indian civil servant in Burma and a highly placed civil affairs officer thereabouts, he performed in the field as later in preparing this book, "an entirely novel task." It is a pleasure to praise the breadth of view, the detailed knowledge, and the understanding he brought out of War Office files and war diaries and out of conversations with participants. He has fused them into a highly commendable and very readable narrative, supplemented by a few special expository chapters on particular points. I can think of no single volume which can serve so well to introduce a military student to the problems, the techniques, and the policies of military government.

We know that the author was half around the world during the events he describes here, but he depicts situations as though he had been there.

Civil affairs-military government in Northwest Europe was not a single, simple affair. That makes this volume all the more valuable since it depicts varying circumstances, and preparations for unexpected contingencies. The military commander on the ground is responsible for law and order in invaded territories, for the security of his own forces, and out of humanity to battered inhabitants. But it is not as simple as that. Allied troops entered friendly Norway after the German surrender, with the Norwegian King ready to take over, and the need of reviving a friendly economy. Before the May surrender the Allies took over only a tiny part of the Netherlands and when they did get in they almost immediately had to thin civil affairs detachments out and hurry them into Germany. In Belgium the liberation was more complete by autumn of 1944, but there was some doubt as to Belgian acceptance of the German-held King. Furthermore, the economy was boosted strongly, because Belgian production was needed to support the Allied effort. France was a friendly country being liberated, but the troops landed in Normandy were not sure how fully or how soon General De Gaulle would be accepted, how much the politically liberal-minded resistance would cooperate in government, or upset things by violence against suspected "collaborators." There were major supply problems including the great headaches of food and coal for Paris, revival of the economy and use of French resources to support the still continuing military operations.

There was, at the end, a positively huge refugee problem. As Donnison says, the need for keeping refugees from obstructing military operations (as in France in 1940) was a major reason for civil affairs and military government, and a major subject of pre-invasion discussion. But, in the event, the actually great refugee problem did not arise until the invading troops were rushing well across the Rhine; and then and after 5 May it was far huger and more difficult than had ever been imagined. Donnison's handling of the story of these events is brief and expert. Notable is the manner in which he explains how the Morgenthau no-industry idea had to be abandoned if for no other reason than at least simply to make work for populations so their roads and railroads could move foods and also so that they would have money to buy food; else they would decline into disease and disaster.

Most interesting of all is the manner in which the working officers in CAMG shouldered their burdens. Donnison sketches the situation well. Policy toward inhabitants (excepting the unusual plan to destroy the Nazi party) was hard to come by. At the highest level there were discussions and disagreements right up to the very last moment. President Roosevelt upset one applecart. Even the SHAEF handbook was produced very late, after personnel were trained and detachments formed and briefed. Yet, as the invasion went in, these people were with front-line divisions. The armies (British Second and U. S. First) knew what they were going to do, and how. Their working plans had been drawn up at the lower levels and instructions were issued accordingly. And then when AMGOT came pounding up from Italy to sweep in for some of the top-flight positions in the northwest, the newer and sounder policy on command control had already been adopted by SHAEF and was firmly settled. The volume gives good evidence of the values of command control during operations, as distinguished from the "parallel" system of a separate civil affairs control and even a separate civil affairs supply.

Indeed, there was so much done by these CAMG people that ordinary staff and line officers never knew what civil affairs really is. (A reading of this book is necessary to show better than the mere legalistic theorizing so common at the ordinary service school.) It is based at the very lowest municipal structures and grows from there. It is applied by professional officers or by citizen-officer specialists who have been indoctrinated and ac-

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R. S. Reynolds, Jr.
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N. D. Showalter
Seattle, Wash.
MGen. W. J. Sutton
San Antonio, Tex.
Sen. Strom Thurmond
Washington, D. C.

tually trained at special institutions like our Civil Affairs School and the British Civil Affairs Staff Center. The professional would rather be with combat troops. The citizen-soldier who joins up usually "for the duration" would rather not commit himself to remaining in uniform and on his job after the peace or the armistice. But they both loyally did their jobs, as Mr. Donnison emphasizes. This book is only vicariously a tribute to them. It is a valuable record.

START AND END OF A CAMPAIGN

CHARGE! The Story of the Battle of San Juan Hill. Col. A. C. M. Azoy. Longmans, Green & Company. 182 Pages; Maps; Index; $3.95

Reviewed by

COL. R. ERNEST DUPUY, a distinguish Army historian.

This is the robustious story of a robustious little campaign which put Teddy Roosevelt in the White House. If the Cuban campaign of 1898 reflects but little glory on the harassed, hidebound, red-tape-ridden War Department of that day or on the high command in the field, it does stand as a monument to raw courage on the part of the men engaged.

San Juan Hill was, as the author well puts it, "the only engagement in our Army's history which marked the simultaneous start and finish of a campaign by an expeditionary force on foreign soil."

On the American side, the story of San Juan Hill is that of divided objectives; of a commander who split his forces to attack two widely separated strongpoints, and when the day was done had no reserves in hand to accomplish his mission: the taking of Santiago. On the Spanish side, it is a story of asinine futility on the part of a commander content to stand on the defensive with a small part of his available troops, and make no use of his total superiority in numbers.

But what happened to the men engaged is the real story. This Colonel Azoy has brought out in fascinating detail. One only regrets that his very readable book does not stress the lessons so acidly etched by Steele in his *American Campaigns* (missing, by the way, in the copious bibliography).

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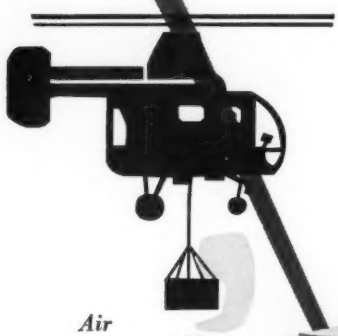

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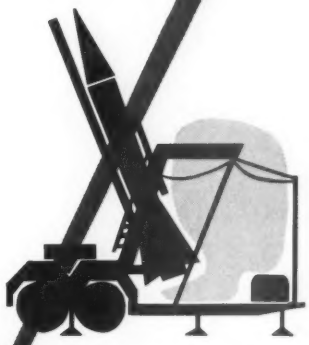

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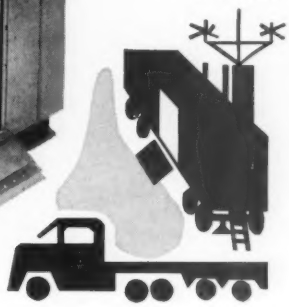

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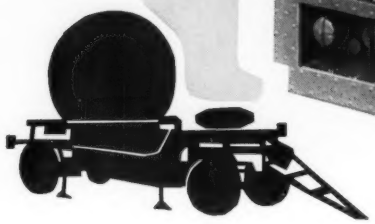

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FLIGHT TIME—1 HR. 50 MIN.*


LV. BEIRUT 12:30 PM


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